



Petroleum  
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Conseil canadien des  
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## **SASKATCHEWAN UPSTREAM OIL & GAS WORKFORCE DEVELOPMENT REPORT**

**A study to support the establishment of a workforce development plan for the  
upstream oil & gas industry within the province of Saskatchewan**

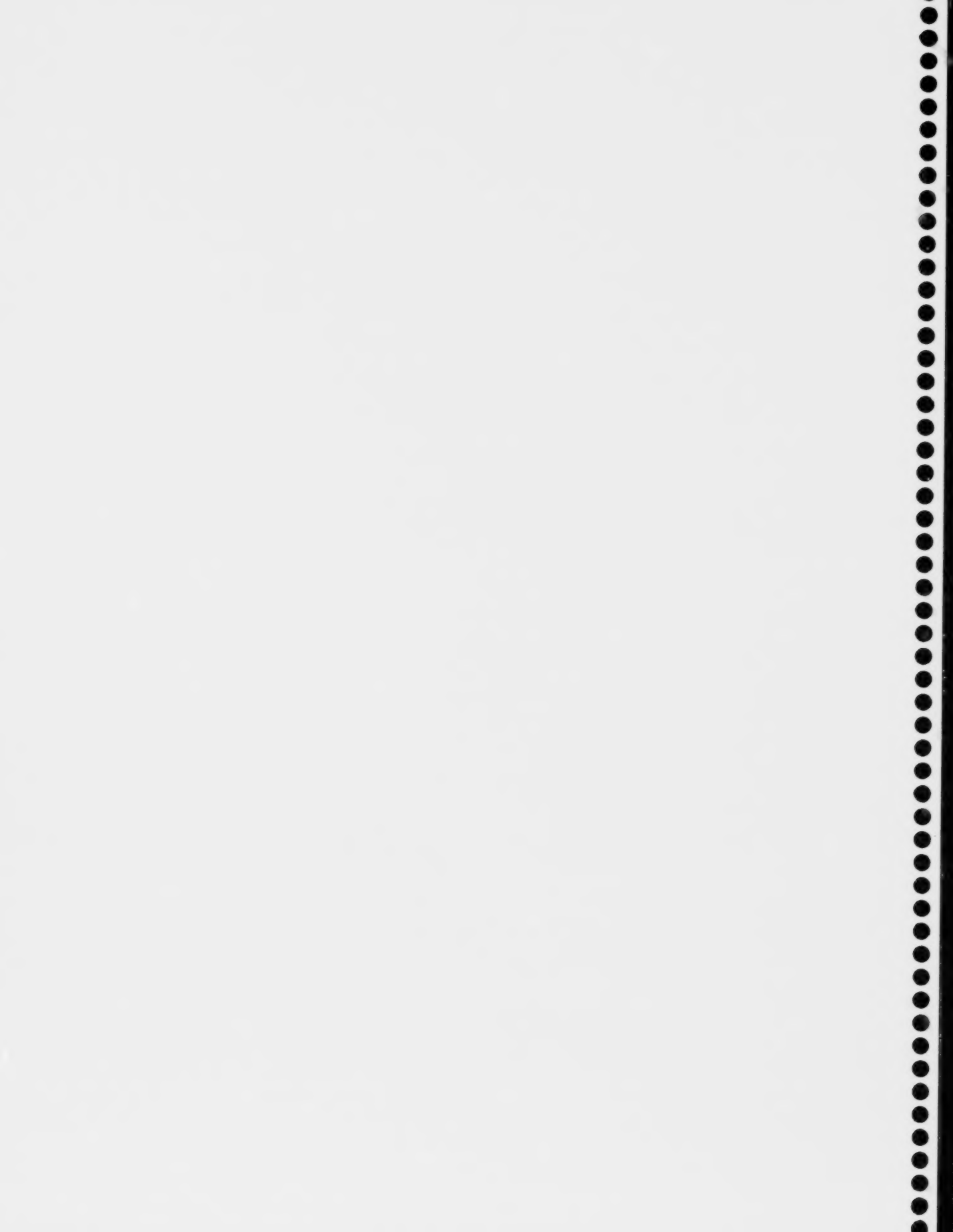
**July 2007**

**Canada**



**Saskatchewan  
Advanced Education  
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- Funding for this project was provided by the Saskatchewan Department of Advanced Education and Employment and the Government of Canada's Sector Council Program.
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- On behalf of the project sponsors the project was ably directed by the project manager, Mr. Jim Ludwig, with professional guidance from Ms. Cheryl Knight and Mr. Rick Pawliw.

The opinions and interpretations in this publication are those of the consultants and do not necessarily reflect those of the Governments of Canada and Saskatchewan.

## TABLE OF CONTENTS

<b>EXECUTIVE SUMMARY</b> .....	<b>7</b>
<b>1.0 INTRODUCTION</b> .....	<b>10</b>
<b>1.1 Project Terms of Reference</b> .....	<b>10</b>
<b>1.2 Project Methodology</b> .....	<b>10</b>
<b>1.3 Project Target Audience and Potential Application of the Upstream Oil and Gas Workforce Report</b> .....	<b>11</b>
1.3.1 The Upstream Oil and Gas Industry.....	11
1.3.2 The Federal and Provincial Governments.....	11
1.3.3 Educational Systems and Institutions.....	11
1.3.4 Aboriginal Leadership.....	11
1.3.5 Immigration and Settlement Agencies.....	12
1.3.6 Other Stakeholders.....	12
<b>2.0 THE UPSTREAM OIL AND GAS INDUSTRY IN SASKATCHEWAN</b> .....	<b>13</b>
2.1 Saskatchewan Oil & Gas Industry Overview.....	13
2.2 Number of Employers.....	13
2.3 Earnings.....	13
2.4 Employment.....	14
2.5 Characteristics of the Saskatchewan Oil and Gas and Mining Labour Force.....	16
2.6 Current and Projected Areas of Industry Activity.....	17
<b>3.0 SASKATCHEWAN POPULATION AND WORKFORCE DEMOGRAPHICS</b> .....	<b>20</b>
3.1 General Population Demographics.....	20
3.2 Aboriginal Population Demographics.....	20
3.3 Participation of Women in the Upstream Oil and Gas Workforce.....	22
3.4 Persons with Disabilities.....	23
3.5 Workforce Competition.....	23
<b>4.0 PROVINCE OF SASKATCHEWAN - EDUCATION AND TRAINING CAPACITY</b> .....	<b>24</b>
4.1 Education Systems and Enrollments in Saskatchewan.....	24
4.2 Oil and Gas Sector Institutional Training Capacity.....	25
4.2.1 Saskatchewan Regional Colleges.....	25
4.2.2 Saskatchewan Institute of Applied Science and Technology (SIASST).....	25
4.2.3 Saskatchewan Indian Institute of Technologies (SIIT).....	26
4.2.4 University of Saskatchewan.....	26
4.2.5 University of Regina.....	27
4.2.6 Private Training Providers.....	28
<b>5.0 OIL AND GAS SECTOR WORKFORCE DEMAND</b> .....	<b>29</b>
5.1 Current and Projected Workforce Demand.....	29
5.2 Critical Labour Shortages.....	29
<b>6.0 OIL AND GAS SECTOR WORKFORCE SUPPLY</b> .....	<b>31</b>
6.1 Potential Workforce Supply Sources.....	31
6.1.1 Aboriginal Workforce Supply Sources.....	31
6.1.2 Women as a Workforce Supply.....	31
6.1.3 Immigration and Settlement.....	32
6.1.4 Other Under-Represented Sources of Workforce Supply.....	33
6.2 Current Government Initiatives.....	33
6.3 Barriers.....	33
<b>7.0 EMERGING OIL AND GAS SECTOR TECHNOLOGIES</b> .....	<b>34</b>
7.1 New Technology.....	34
7.2 Oil Sands Exploration.....	35
<b>8.0 KEY INFORMANT INTERVIEW RESPONSES – CURRENT INDUSTRY WORKFORCE PARTICULARS</b> .....	<b>36</b>
8.1 Project Background.....	36
8.1.1 Methodology.....	36
8.2 Current Snapshot.....	37

8.2.1	Employment Numbers.....	37
8.2.2	Employee Shortage.....	38
8.2.3	Present Employee Shortage.....	39
8.3	Future Hiring Plans.....	40
8.4	Hiring.....	41
8.4.1	Barriers to Hiring and Retaining.....	41
8.4.2	Recruitment.....	42
8.4.3	Competition.....	44
8.5	Retention & Training.....	45
8.5.1	Benefits.....	45
8.5.1	Training.....	46
9.0	KEY INFORMANT INTERVIEW RESPONSES – BEST PRACTICES.....	48
9.1	Recruitment.....	48
9.2	Retention.....	50
9.3	Career Development.....	52
9.4	Future Training Requirements.....	53
9.5	Future Workforce Needs.....	55
10.0	OPTIONS AND RECOMMENDATIONS.....	56
10.1	Introduction.....	56
10.2	Recruitment.....	58
10.2.1	Recruitment – Aboriginal Work Force Development.....	58
10.2.2	Recruitment - Women.....	59
10.2.3	Recruitment – Immigration.....	60
10.2.4	Recruitment – Relocation and Repatriation.....	61
10.2.5	Recruitment – Local Area Recruitment.....	62
10.3	Retention.....	63
10.4	Workforce Training.....	64
10.4.1	Saskatchewan Regional Colleges.....	64
10.4.2	Saskatchewan Institute of Applied Science and Technology.....	65
10.4.3	Saskatchewan Indian Institute of Technologies and the Gabriel Dumont Institute.....	66
10.4.4	In-School Counseling.....	67
	BIBLIOGRAPHY OF DATA SOURCES.....	68
	APPENDICES.....	70
	EXHIBIT 1.....	86

## EXECUTIVE SUMMARY

This study was commissioned and funded by Saskatchewan Advanced Education and Employment and the Government of Canada's Sector Council Program.

The Petroleum Human Resources Council of Canada (Petroleum HR Council) was engaged to manage the project and the firm of Saskatoon Aboriginal Business Associates Ltd. was contracted to provide the required research and analysis and to author the study report. Fast Consulting, a Saskatchewan based firm conducted the Key Informant industry interviews.

A multi-party Steering Committee comprised of representatives from the governments of Saskatchewan and Canada, the upstream petroleum industry Petroleum HR Council member organizations, Saskatchewan post-secondary training colleges, institutions, and Universities and the Saskatchewan Apprenticeship and Trade Certification Commission provided overall direction to the project managers and consultants.

### Objective

The omnibus objective of the project is to conduct a study to provide a basis for a workforce development plan for the upstream oil and gas industry within the Province of Saskatchewan.

### The Upstream Oil and Gas Industry

The sectors of the upstream oil and gas industry, for the purposes of this study, include exploration and production, service industries (geophysical and seismic services, drilling and completions and oil field services), pipeline transmission, natural gas processing, and mining/extraction and upgrading heavy oil and bitumen as represented by the Petroleum HR Council.

The associations represented by the Petroleum HR Council are:

- Canadian Association of Geophysical Contractors (CAGC)
- Canadian Association of Oilwell Drilling Contractors (CAODC)
- Canadian Association of Petroleum Producers (CAPP)
- Canadian Energy Pipeline Association (CEPA)
- Communications, Energy and Paperworkers Union of Canada (CEP)
- Energy Services BC (ESBC)
- Newfoundland Ocean Industries Association (NOIA)
- Offshore/Onshore Technologies Association of Nova Scotia (OTANS)
- Ontario Petroleum Institute (OPI)
- Petroleum Services Association of Canada (PSAC)
- Small Explorers and Producers Association of Canada (SEPAC)

### Project Methodology

The consultants researched a wide variety of industry reports and publications and statistical source data. Key informant interviews were conducted with a representative group of firms from the various sectors of the upstream oil and gas industry, and focus group discussions were held with aboriginal leadership and students enrolled in construction and heavy equipment operator training programs.



Secondary research was conducted to identify successful recruitment, retention, and training initiatives which might prove to be of value in the Saskatchewan workforce development plan.

### **Project Target Audience**

The information generated by the study will provide the starting point for the potential development of a comprehensive workforce development plan and identifies the potential role and contributions to a long term plan which can be initiated by all sectors of the upstream oil and gas industry operating in the Province of Saskatchewan, the Federal and Provincial governments, Education systems and institutions, aboriginal leadership, immigration and settlement agencies and a variety of other stakeholders including career counselors, employment agencies, economic development authorities, and immigration agencies.

### **The Saskatchewan Upstream Oil and Gas Industry – Workforce Development Challenges**

The report provides substantial detail on the workforce composition, industry growth projections, challenges and barriers experienced by the industry and training institutions, and the increasing importance of the oil and gas sector to the prosperity of the provincial economy.

### **Education and Training Capacity**

Saskatchewan has a well established educational infrastructure which provides education and training ranging from basic elementary and secondary education to post-secondary trades and skills training and accreditation, degree and diploma programs, and sector specific training in partnership with industry.

The Saskatchewan education systems and institutions have a capacity in terms of programming, accreditation, certification and industry related training and no gaps in this capacity are identifiable.

The training issues which must be considered in an industry workforce plan are related to timing, location and frequency of course delivery in the skill demand occupational categories identified by the industry.

### **Upstream Oil and Gas Industry Workforce Demand**

The major occupations which are currently, and projected to continue to be in demand, are in these categories: helpers, labourers, and semi-skilled workers; trades; technicians and operators.

The study identifies barriers to recruitment and retention in these occupational categories and the efforts and initiatives of the industry and governments to address them.

### **Upstream Oil and Gas Industry Workforce Supply**

The study provides detailed treatment of the three major potential sources of labour supply to the industry:

- **Aboriginal Workforce** – have a low participation rate in the provincial workforce and are under-represented in the oil and gas sector in Saskatchewan;

- Women Workforce Participation – the current industry workforce has an 11% participation of women;
- Immigration – projected to be the largest source of population growth in Canada over the next two decades.

Of lesser significance in terms of volume of supply are local recruitment of seasonal and part time workers, persons with disabilities, and other visible minorities.

### **Action Options and Recommendations**

Options and recommendations provided in this report address the following areas of the upstream oil and gas industry workforce development:

#### **Recruitment:**

- Recruitment of non-traditional and under-represented workforce labour supply sources with particular emphasis on women and aboriginals;
- Immigration as a major workforce supply source;
- Repatriation and relocation recruitment strategies;
- Local area recruitment in areas of intense industry activity.

#### **Retention:**

- Policies and practices for successful employee retention.

#### **Training:**

- Options and recommendations to enhance the training capacity of Saskatchewan post-secondary colleges and institutions;
- In-school career counseling in support of industry workforce occupational needs;
- Custom contract training in areas of critical workforce shortages.

The recommendations reviewed and accepted by the Steering Committee are presented in Section 10 of this report.

It is recognized that all of the recommendations may not be relevant or acceptable to all sectors of the upstream oil and gas industry and are presented as potential components of a "go-forward" workforce development plan.

## 1.0 INTRODUCTION

### 1.1 *Project Terms of Reference:*

The Government of Saskatchewan, Department of Advanced Education and Employment, and the Government of Canada's Sector Council Program jointly funded this study.

The Petroleum Human Resources Council of Canada (Petroleum H.R. Council) was engaged to manage the project assisted by a project manager assigned by the sponsors.

The omnibus objective of the project is **"to conduct a study leading to the establishment of a workforce development plan for the upstream oil and gas industry within the Province of Saskatchewan."**

The study components of the project which are addressed in this report are:

- To determine the size and scope of the current and projected Saskatchewan upstream oil and gas industry workforce;
- To identify and analyze the key Human Resource issues and challenges facing the current and future industry workforce needs;
- To identify the stakeholders, partners, resources, and strategic alliances which must be involved in the industry workforce development plan;
- To identify and analyze the impediments and barriers to industry workforce development which must be addressed;
- To examine issues and identify best practices related to training, recruitment, retention and;
- To identify actions, approaches, options, and priorities and to present recommendations which will form the basis of a partnership approach to the preparation of a "go forward" plan for the Saskatchewan upstream oil and gas workforce development.

The primary sectors of the upstream petroleum industry include exploration and production, service industries (geophysical and seismic services, drilling and completions and oil field services), pipeline transmission, natural gas processing, extraction and upgrading of heavy oil and bitumen with emphasis on the Western Canadian Sedimentary Basin in the Province of Saskatchewan.

### 1.2 *Project Methodology:*

The project, under the management of Petroleum H.R. Council, was directed by a multi-party Steering Committee comprised of representatives from the governments of Saskatchewan and Canada, the upstream petroleum industry member organizations of the Petroleum H.R. Council, Saskatchewan post-secondary institutions, and the Saskatchewan Apprenticeship and Trade Certification Commission.

Professional contractual research and consulting services provided the required data collection and industry workforce needs assessment.

The consultants researched a wide variety of industry reports and publications, statistical source data, convened a series of focus group discussions with students and aboriginal leadership, researched a variety of recruitment and training "best practices" utilized in other jurisdictions, and conducted a broad sampling of "key informant" interviews with representatives from the upstream oil and gas industry to generate the information presented in this report.



Three focus group discussions were also conducted by the project consulting team – one session with aboriginal leadership and two sessions with aboriginal students currently enrolled in training programs. A number of specific suggestions and recommendations related to increased aboriginal workforce participation were identified in these discussions.

The consultants examined current federal and provincial government programs designed to stimulate immigration of foreign workers to Canada and Saskatchewan in occupational categories which are experiencing critical shortages in the current workforce. They also researched a variety of initiatives developed to attract non-traditional oil and gas workforce participation in under-represented categories such as women and people with disabilities.

### **1.3 *Project Target Audience and Potential Application of the Upstream Oil and Gas Workforce Report:***

#### **1.3.1 *The Upstream Oil and Gas Industry:***

All sectors of the upstream oil and gas industry operating in the Province of Saskatchewan will have the opportunity to consider the potential benefits of implementing the initiatives, options, and recommendations presented in this report. They will be encouraged to participate in the implementation of a coordinated plan to address the current and projected industry workforce needs and shortages.

#### **1.3.2 *The Federal and Provincial Governments:***

Government policy development and resource allocation require a strong supporting data base and reliable cost benefit analysis and justification. The importance of the oil and gas sector to the fiscal strength of the Provincial economy and for employment creation coupled with the options and initiatives presented in this report will assist governments in coordinating an integrated workforce development plan in partnership with industry and other stakeholders.

#### **1.3.3 *Educational Systems and Institutions:***

The network of training institutions, including the Apprenticeship and Trade Certification Commission, in Saskatchewan must be aware of, and responsive to, the labor force needs of the upstream oil and gas industry. They also require the data provided in this report for program planning and the identification of the career opportunities and skill requirements available in the industry.

#### **1.3.4 *Aboriginal Leadership:***

Often described as the largest untapped human resource in Saskatchewan, aboriginal workers can become a large and important source of labor for the growing needs of the oil and gas sector in the Province. In Saskatchewan, aboriginal governments are well organized at the community, Tribal Council, and Provincial levels and the leadership is strongly committed to employment creation. If the industry is to be successful in attracting this human resource supply the aboriginal leadership and the Saskatchewan Indian Institute of Technologies must be fully engaged and participate in the Saskatchewan oil and gas workforce development plan.

### **1.3.5 Immigration and Settlement Agencies:**

Immigration is fuelling two-thirds of Canada's population growth and will likely become the only source of gains by 2030 according to Statistics Canada national census snapshot released March 13, 2007 (Globe and Mail – March 14, 2007).

If the upstream oil and gas industry is to be successful in attracting and retaining this workforce supply there must be close cooperation and liaison between the industry and government.

### **1.3.6 Other Stakeholders:**

There will be a strong role for a variety of key “players” which, although not directly involved in the oil and gas sectors, can participate in, and benefit from, a focused industry workforce development plan. These include middle and senior in-school career counselors, Regional Economic Development Authorities, Unions, Chambers of Commerce/Boards of Trade and Employment and Placement Agencies. Although peripheral to direct involvement in the industry these entities can be of substantial support to the implementation of the workforce development plan.

## **2.0 THE UPSTREAM OIL AND GAS INDUSTRY IN SASKATCHEWAN**

### **2.1 Saskatchewan Oil & Gas Industry Overview:**

Some Basic Facts:

- Saskatchewan produces 430,000 barrels of crude oil per day and accounts for 18% of Canada's oil production. Put in context, the amount of oil Saskatchewan produces each day is equivalent to its gasoline demand for 14 days;
- Saskatchewan produces 270 billion cubic feet of natural gas annually and is Canada's third largest natural gas producer. This quantity of gas will heat one million homes for one year;
- Saskatchewan has vast resource potential of both crude oil and natural gas. The Province's remaining crude oil is estimated at 4.2 billion barrels. About half the Province's crude oil production is heavy crude found in the west central region of the Province. The natural gas potential is estimated at 4 trillion cubic feet;
- Payments to the Provincial treasury (excluding corporate income taxes from the oil and gas sector) - \$6.6 billion from 2001/02 to 2006/07;
- Annual industry investment of \$2.5 billion in capital to explore for and develop petroleum resources;
- More than 26,000 direct and indirect jobs in the oil and gas industry;
- Strong growth in corporate and personal tax base.

Source: Canadian Association of Petroleum Producers

### **2.2 Number of Employers:**

In 2005 there were 318 separate Saskatchewan establishments whose primary source of revenue was oil and gas extraction and another 1,059 whose primary source of revenue was in support activities for the mining and oil/gas sector.

### **2.3 Earnings:**

The paid workers in the oil/gas sector had average earnings of \$1,259 per week in 2006 which is almost double the provincial average of \$693/week. This translates into an average gross payroll of \$14 billion in 2006 compared with \$9 billion ten years ago.

In the past ten years, earnings among those in the support activities have grown more quickly than those in oil/gas extraction so that the two earnings figures were nearly the same in 2006.

Earnings in Saskatchewan in the oil and gas sector are lower than in Canada as a whole. Compared with the \$1,259/week in Saskatchewan during 2006, the average earnings in Alberta were \$1,657.

Source: Survey of Employment, Payroll and Hours, Table 281-0027, CANSIM, Statistics Canada.

## 2.4 Employment:

The data source for employment does not allow the separation of mining from the oil and gas sector and, therefore, these data cover the entire resource sector. However, to provide an understanding of the proportional representation, in 2005 about six out of ten persons employed in the resource sector were in the oil/gas sector.

The following statistics describe Saskatchewan employed workers and self-employed workers in the resource sector in 2005:

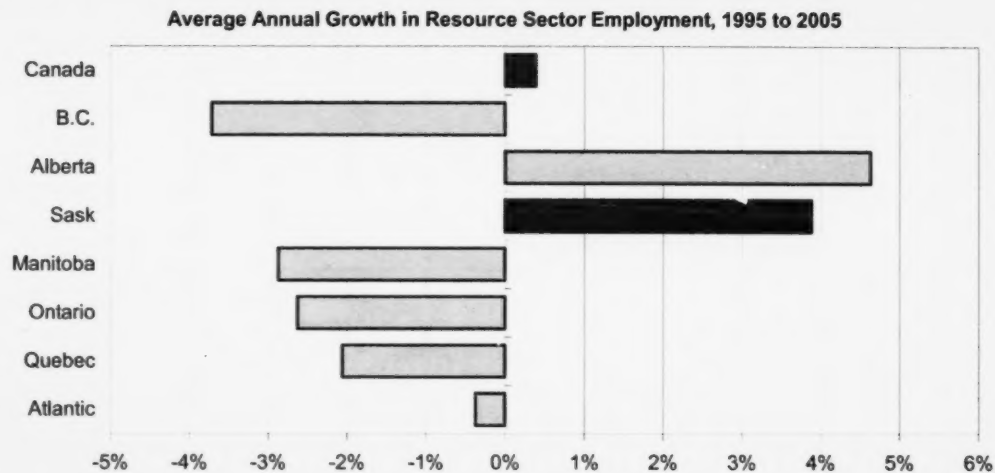
- 89% were in paid, full-time positions and 6% were self-employed;
- One half were in occupations specific to the resource sector; 21% were in trades or transportation occupations;
- 26% were union members;
- One third worked in a firm with five or fewer employees;
- One third had been with their current employer for ten or more years; 22% had been there less than a year;
- The average wage rate was \$23.49/hour;
- 89% were male;
- 18% were under 25 years of age and 34% were 45 years of age and older;
- The fastest growing age group among employees are those 45 to 54 years of age;
- 46% had a post-secondary education - typically a certificate or diploma;
- 61% lived in a husband-wife household with two or more earners;
- 35% reported "usually" working more than 40 hours/week and an average of 47% reported "actually" working more than 40 hours/week over the course of the year.

Source: Sask. Trends Monitor

Compared with those working in the resource sector in other provinces, Saskatchewan employees had several unique characteristics.

- Employment growth from 1995 to 2005 was the second highest after Alberta;
- The proportion who are self-employed is the lowest in Canada;
- The proportion who are women is the lowest in Canada;
- The proportion who are union members is near the national average although much higher than in Alberta;
- Average hourly earnings are near the national average but below rates in Ontario and Alberta;
- Compared with other provinces, Saskatchewan workers tend to be younger;
- Average hours worked per week was the highest in Canada.

The following charts illustrate these characteristics:



## 2.5 Characteristics of the Saskatchewan Oil and Gas and Mining Labour Force:

The following data is summarized from Statistics Canada 2005 Labour Force Survey.

Statistics Canada does not separate oil and gas sector and mining sector labour force data:

### Employment by occupation group 2005:

Management/Administration	13%
Natural and applied Sciences	8%
Trades and Transport	21%
Specific sector services	48%
Others	10%
TOTAL	100%

### Firm size (# of employees):

Fewer than 20	31%
20 to 99	30%
100 or more	39%
TOTAL	100%

- Gender : Male – 89%; Female – 11%.

### Age Groups:

Under 25	18%
25-34	24%
35-44	23%
45-54	26%
Over 55	8%
TOTAL	99%*

\*Rounding error

### Level of Education:

Less than Grade 12	17%
High school	36%
Post-secondary	37%
University	9%
TOTAL	99%*

\*Rounding error

### Family Type:

Unattached	15%
One income family	17%
Two income family	61%
Lone parent	8%
TOTAL	101%*

\*Rounding error

## **2.6 Current and Projected Areas of Industry Activity:**

The map presented on the following page is a compilation of information to provide the reader with a province-wide view of the current industry activity, the Regional Colleges and the location of aboriginal communities within Saskatchewan. The principal locations for crude oil processing are Regina and Lloydminster.

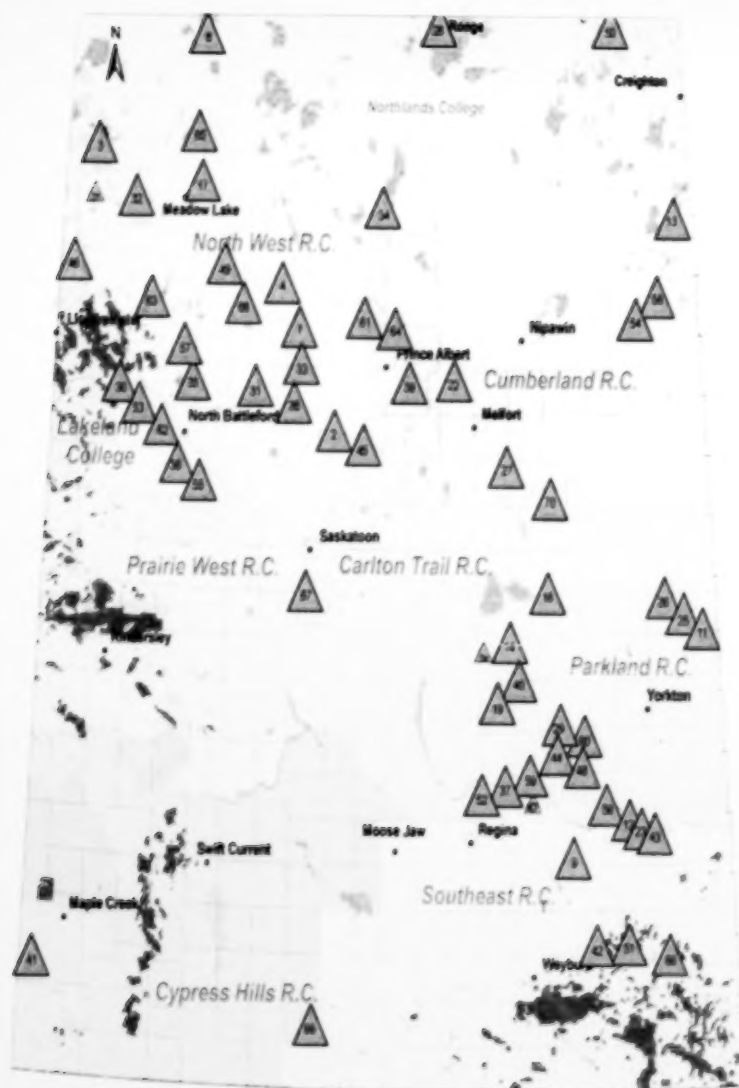
The First Nations communities displayed on the map are identified in **Exhibit 1**.

The second map displays the major areas of oil and gas activity in Saskatchewan.



Source: INAC, Sask. Advanced Education and Employment, Sask. Industry and Resources





**Legend**

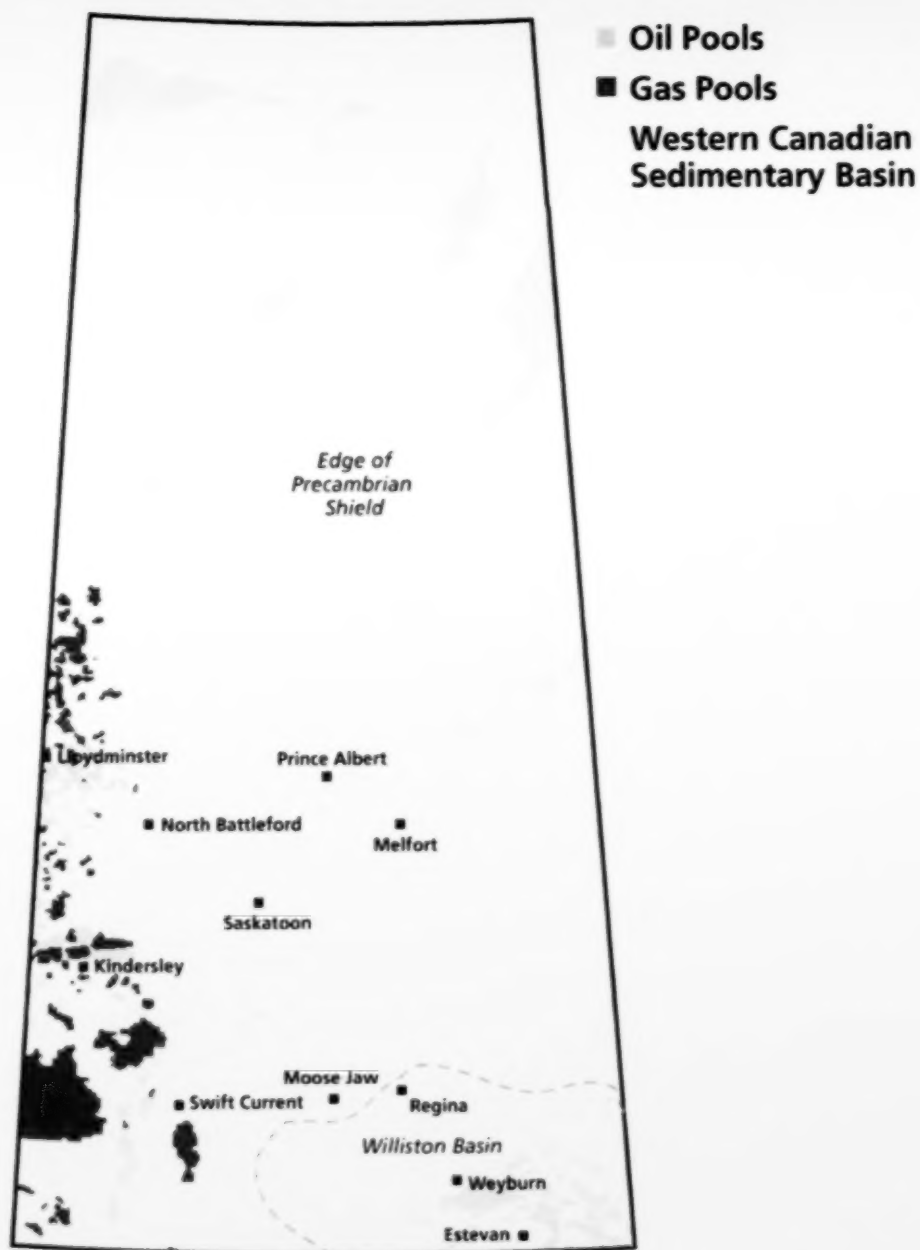
- City/Town
- Water Body
- Railroads
- Highway
- Rural Municipality
- First Nations
- Oil Pools
- Gas Pools

**Saskatchewan Regional College Districts**

- Lakeland College
- Carlton Trail R.C.
- Cumberland R.C.
- Cypress Hills R.C.
- North West R.C.
- Parkland R.C.
- Prairie West R.C.
- Southeast R.C.
- Northlands R.C.

Oil and Gas Assets Data  
Sourced from The Government of  
Saskatchewan Geological Atlas of  
Saskatchewan. Reproduced with  
the permission of Her Majesty the  
Queen in Right of Saskatchewan.  
New Data: Natural Resources Canada

Source: INAC, Sask. Advanced Education and Employment, Sask. Industry and Resources



Source: Canadian Association of Petroleum Producers

### 3.0 SASKATCHEWAN POPULATION AND WORKFORCE DEMOGRAPHICS

#### 3.1 General Population Demographics:

On March 13, 2007 Statistics Canada released the 2006 census data. The following excerpts are of particular relevance to the development of a Saskatchewan upstream oil and gas workforce plan:

- Saskatchewan's 2006 population was 968,157 – down 10,776 from 2001. The rate of decline remained unchanged relative to the 1996 to 2001 period at 1.1%.
- Saskatchewan's net migration loss to Alberta averaged more than 10,000 people a year between 2001 and 2006;
- 44% of Saskatchewan's population live in the province's two metropolitan areas – Saskatoon and Regina;
- 55% of the population of Saskatchewan live in one of the province's 14 cities;
- Lloydminster and Swift Current experienced population growth between 2001 and 2006; Moose Jaw showed zero per cent increase and the remaining smaller cities experienced population declines;
- 18% of Saskatchewan's population live within the province's 296 rural municipalities;
- 15% of Saskatchewan's population live within the province's 147 towns;
- Recently released provincial population demographics indicate the population in Saskatchewan is experiencing an upward trend (Star-Phoenix March 2007).

Other significant statistics include the following analysis:

- Saskatchewan's population has been effectively at or near one million people for the past twenty years. Except for Newfoundland, other Provinces are growing more quickly;
- The "baby boom" generation is still the dominant feature of the Province's age structure. Compared with other Provinces, Saskatchewan has a high proportion of older seniors and a high proportion of children and youth – the "youth factor" mainly attributed to the aboriginal population;
- Although the fertility rate in Saskatchewan is one of the highest in Canada, the number of births is declining. The number of deaths is increasing so the natural growth rate (births minus deaths) is declining;
- Inter-provincial migration has resulted in a net loss of population in 25 of the last 31 years and is the basic reason why the population has not grown.

Source: Demographic Trends in Saskatchewan – SaskTrends Monitor"

#### 3.2 Aboriginal Population Demographics:

The term "Aboriginal" is used to describe the population identified in the Statistics Canada Census as North American Indian, Métis, or Inuit.

Studies conducted by the Federation of Saskatchewan Indian Nations and by the Province of Saskatchewan have produced similar data as outlined below:

- Aboriginal citizens currently represent 18% of the Saskatchewan population and by the year 2035 this will increase to approximately 35%;

- The non-aboriginal population is aging whereas the aboriginal population, particularly First Nations who comprise 80% of the "aboriginal" population, is young and expanding at three times the rate of the non-aboriginal population;
- Within the next decade over 40% of the resident employable workforce in Saskatchewan will be of aboriginal ancestry;
- The current and projected geographic distribution of the aboriginal population in Saskatchewan which is most relevant to this report in terms of industry workforce recruitment and training initiatives is best presented using the Provincial Economic Model of Saskatchewan (PREMOS). This model generates the following data which is projected to remain constant for the next two decades (2005-2025).

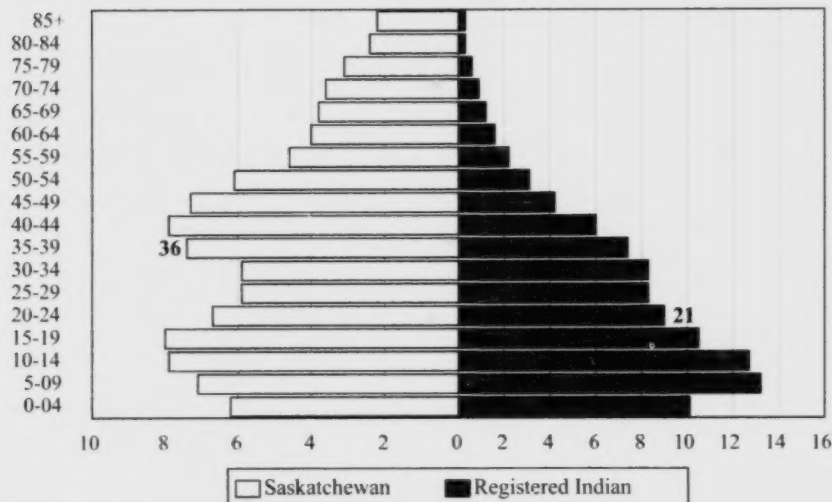
Saskatchewan Geographic Population Distribution:

Region	Non-aboriginal Group	Aboriginal Group
#1 – North of 54	4%	32%
#2 – Urban (Regina/Saskatoon/P.A.)	41%	34%
#3 – Rural	55%	34%
TOTAL	100%	100%

In January 2007 Statistics Canada released the article "The Aboriginal Labour Force in Western Canada 2001-2005" the highlights of which include:

- In Western Canada, Aboriginal (off-reserve) employment grew 23% between 2001 and 2005, compared with only 11% for non-Aboriginals;
- While the unemployment rate gap narrowed in the period, the Aboriginal rate remained 2.5 times that of the non-Aboriginal labour force in 2005;
- The effect of post-secondary education on employment is particularly beneficial for Aboriginal women – these women had an employment rate 11 percentage points higher than non-Aboriginal women;
- Most of the growth in the Western off-reserve Aboriginal labour force was dominated by the three largest occupational sectors: sales and service (35%); business, finance and administration (19%); and trades, transport and equipment operators (18%);
- Aboriginal people in Alberta had the highest labour force participation rate (70% of the working-age population). In contrast, Saskatchewan continues to have the lowest Aboriginal employment rate (52%);
- Significant disparities remain between the Aboriginal and non-Aboriginal populations. Saskatchewan has the largest employment rate gap (14 percentage points compared to 7 percentage points for all of Western Canada) – the employment gap is extremely high in the cities of Saskatoon and Regina, where a large number of Aboriginal people reside.

### Age Distribution, Saskatchewan Population and Registered Indian Population, 2001



**Sources:**

Saskatchewan Population: 2001 Census

Registered Indian population: 2001 Indian Register

Note: Saskatchewan Population includes Registered Indian

The key information provided on the above chart is the following:

- The First Nations population percentage in Saskatchewan is much younger than the rest of the general Saskatchewan population;
- The median age of the First Nations population is 21 years;
- The median age for the Non-First Nations population is 36 years.

### 3.3 Participation of Women in the Upstream Oil and Gas Workforce:

Women have not traditionally been attracted to the occupations required by the upstream industry and represent another large potential workforce labour pool. Some of the reasons provided by industry representatives interviewed, for failure to actively recruit women into the workforce, center on the physical demands, irregular hours, and rigors of camp life inherent in the nature of much of the work in the industry.

Women represent 46.6% of the total workforce in Saskatchewan; however, women comprise only 11% of the workforce in the oil and gas sector. These data indicate that women are very under-represented in the industry.

Source: Statistics Canada 2006 Labour Force Survey.

New technologies have substantially eased the physical occupational demands in areas such as equipment operation and transportation and enrollments in trades and services training programs indicate that there is a growing participation by women in occupations that have not traditionally been attractive to them.

Other examples of occupations affected by new technologies are power engineering and welding.

### **3.4    *Persons with Disabilities:***

Although not viewed as a significantly large source of potential labour, a joint industry-government strategy on workforce diversity may identify increased representation by persons with disabilities in the industry workforce.

The Saskatchewan Disabilities Council provides no formal classifications of persons with disabilities; however, the Council has a number of programs to promote the recruitment and employment of persons who have physical or intellectual impairments and to assist individuals in the workplace.

### **3.5    *Workforce Competition:***

According to a recent Star-Phoenix article, the current unemployment rate for Saskatchewan is 3.9%. In 2006 Saskatchewan approached what economists call "full employment" with the lowest unemployment on record, the strongest job growth in thirty years, and job shortages in many key areas. (Saskatoon Star Phoenix – Jan. 11, 2007 – source – SaskTrends Monitor).

During 2006, the participation rate – the proportion of the adult population working or looking for work reached 69.1% for the first time. The challenge this statistic suggests is to engage the adult population not actively seeking employment.

The upstream oil and gas sector competes for workers with several other sectors of the Provincial economy for the same skills and trades such as the Construction, Mining, Manufacturing, Transportation, and Service sector industries.

Another major competition factor is the oil and gas sector in Alberta which has been a major source of out-migration of the Saskatchewan workforce for several years.

## 4.0 PROVINCE OF SASKATCHEWAN - EDUCATION AND TRAINING CAPACITY

### 4.1 Education Systems and Enrollments in Saskatchewan:

Saskatchewan has a well-established publicly funded educational systems infrastructure as well as a number of private training institutions which provide education and training ranging from basic elementary and secondary education to post secondary trades and skill training and accreditation, degree and diploma programs, and sector specific targeted training in partnership with industry. These include:

- Public, Catholic, and Private School systems – offering K – 12 curriculum – supervised and managed by Saskatchewan Learning and District School Boards;
- First Nations K – 12 School systems – located on most First Nations reserves – Federally funded/ Provincial curriculum/supervised by First Nations Education Authorities;
- Saskatchewan Institute of Applied Science and Technology (SIASST) – providing skills and Trades training and certification from several campuses throughout the Province.
- Saskatchewan Indian Institute of Technologies (SIIT) – equivalent role and accrediting status to SIASST;
- Gabriel Dumont Institute – equivalent role for skills and trades training for Métis;
- Saskatchewan Regional Colleges – 9 Colleges with several campus locations are displayed on the map in Section 2.6 of this report;
- Universities of Saskatchewan (Saskatoon) and Regina;
- The Saskatchewan Apprenticeship and Trade Certification Commission;
- Many of these post-secondary institutions offer distance education programming to local and/or remote communities;
- First Nations University of Canada.

Enrollments by type of Credential and type of Delivery – 2005

K-12	167,132
K-12 First Nations*	16,145
Degree	31,613
Certificate/Diploma	5,483
Apprentices	6,817
Adult Basic	5,217

Sources: \*INAC: Draft Nominal Role September 2006.  
 "2005-2006 Annual Report – Saskatchewan Learning"



## **4.2 Oil and Gas Sector Institutional Training Capacity:**

The Saskatchewan education systems and institutions have a complete capacity in terms of programming, accreditation, certification and industry-related training and no gaps in this capacity are identifiable.

Many employers provide in-house on-the-job training to employees and some provide job-site training venues and equipment in support of college training.

### **4.2.1 Saskatchewan Regional Colleges:**

Based on the Key Informant Interview response, the Regional Colleges represent a vanguard training vehicle for many of the skill sets and occupational needs of the upstream oil and gas industry. They are the local presence and have campus locations in the arenas of industry activity.

The Regional Colleges have dedicated considerable effort and resources to develop the capacity to respond to the workforce training requirements of the oil and gas industry.

Employing a variety of funding sources to enhance their core training budgets such as Job Start/Future Skills program funding for example, the Colleges have developed a capacity for delivering oil and gas related training.

An important recent expansion of the Regional Colleges training capacity is the mandate to deliver an oil and gas specific apprenticeship course with certification provided by the Saskatchewan Apprenticeship and Trade Certification Commission. The training course offered through this arrangement is Rig Technician Technical Training which is now available from the Regional Colleges system.

To more fully address the current and projected training needs of the industry the main issues identified by employers interviewed which must be addressed in a workforce development plan are timing, location and frequency of course offerings.

Although not exhaustive, **Appendix A** presents a representative sample of the oil and gas related training initiated and delivered by the Colleges in 2006-2007.

### **4.2.2 Saskatchewan Institute of Applied Science and Technology (SIAST):**

SIAST is Saskatchewan's primary public institution for post-secondary technical education and skills training, recognized nationally and internationally for its expertise and innovation. Almost 12,000 students are registered in SIAST programs, which touch every sector of the economy. SIAST, which operates campuses in Moose Jaw, Prince Albert, Saskatoon and Regina, also provides a wide variety of courses and programs by brokering through the Regional Colleges.

Based on the key economic sectors identified by the Saskatchewan Department of Industry and Resources as having the most potential for significant growth, SIAST has prepared a comprehensive 2006-2011 Business Plan.

Among the most relevant elements of the SIAST Business Plan in terms of oil and gas workforce development and training are the following features and objectives:

- Expansion of facilities and increased training opportunities in all sectors including direct and related oil and gas trades and occupational training;
- Delivering education and training which supports the province's labour market needs of employers, industry, learners and communities;



- Increased focus and emphasis on aboriginal training;
- Customized training for business and industry with specific needs;
- Continue to establish and maintain an interactive, reciprocal partnership with the regional colleges, Saskatchewan Apprenticeship and Trade Certification Commission, other educational institutions and the Department of Advanced Education and Employment.

Source: SIAST Business Plan 2006-2011

#### 4.2.3 Saskatchewan Indian Institute of Technologies (SIIT):

SIIT is an educational institution of the Federation of Saskatchewan Indian Nations offering technical and trades training and education programs to First Nations adults in Saskatchewan.

SIIT delivers programming at campuses located throughout the province including Saskatoon, Prince Albert, Fort Qu'Appelle, North Battleford, Meadow Lake, Yorkton, Onion Lake, Regina and LaRonge.

In July 2000, provincial legislation recognized SIIT as a post-secondary institution which provides for the transfer of credits and recognition of SIIT certificates and diplomas by other institutions and employers.

SIIT develops unique programming that is designed to strike a balance between educational skills and requirements and the cultural traditions and knowledge of the students.

SIIT actively seeks partnerships with industry and employment sectors and has identified the oil and gas sector as one of the institution's primary areas of focus.

#### 4.2.4 University of Saskatchewan:

A large number of graduates from the University of Saskatchewan gain employment in the petroleum industry. The table below summarizes anecdotal information obtained in December 2006 and January 2007 during interviews with representatives from the Dean's office in the College of Engineering, various faculty members in the College of Engineering, and the head of the Department of Geological Sciences.

Program	Approx. Proportion of Graduates in the Petroleum Industry <sup>1,2</sup>	Graduating Class Size
Chemical Engineering	90 - 95%	31
Geological Engineering	50 - 67%	12
Mechanical Engineering	60 - 70%	57
Geological Sciences	30 - 60%	21

- (1) The data provided are not obtained from rigorous tracking or surveying of graduating students or alumni. They are estimates provided by senior faculty members who informally poll their classes near the end of the final year of their programs and, in some cases, who keep in touch with many of their students after they graduate.
- (2) The approximate values given by the various programs do not differentiate between the upstream and downstream components of the petroleum industry. In the notable case of Chemical Engineering, and to a lesser extent in Mechanical Engineering, a significant proportion of the graduates gain employment in the downstream petroleum industry. Virtually all of the jobs obtained by Geological Engineering and Geological Science graduates are in the upstream petroleum industry.
- (3) Graduating class sizes for the Engineering programs are averages based on the Spring convocation lists for 2005 and 2006. Graduating class size for Geological Sciences is an average over the period 1999-2006, based on statistics compiled by the department head.

It is also known that some graduates from other Engineering programs, most notably Civil Engineering and Agricultural and Bioresource Engineering, also gain employment in various sectors of the petroleum industry. In particular, many Civil Engineering graduates get jobs working in geotechnical and geoenvironmental aspects of oilsands mining.

The University has also initiated a recent innovative approach to serve the professional workforce requirements of the oil and gas sector including the following programs:

The Engineering Professional Internship Program (EPIP) provides students the opportunity to practice engineering at a professional level for twelve or sixteen months. This professional experience is in-depth and comparable to the work done by graduate engineers in their first or second years of employment. Returning interns report having valuable experiences, not only in their area of specialization, but also in the development of interpersonal skills and their ability to write reports, present seminars and supervise others.

The work terms normally commence after a student has completed the two and one-half to three years of an Engineering Degree program and have an average of 65% in their previous academic term. Employers choose the student most suitable for their organization through an application and interview process. While employed, the student's work assignments usually relate to their field of study. Projects generally involve research, development and design.

Employers currently participating in the EPIP program include most of the major Canadian oil and gas operating companies, as well as oilfield service companies. Statistics on petroleum-related EPIP graduates are not readily available. The estimates of engineering graduates gaining employment in the petroleum industry, given in the table above, includes those students that elected to take EPIP work terms en route to obtaining their degrees.

New initiatives at the University of Saskatchewan that are targeted towards the Petroleum Industry include:

- A Petroleum Option that was added to the Chemical Engineering Program in 2006.
- The Geological Engineering Program is currently in the early stages of creating a Petroleum Option, which will draw largely on existing petroleum-related course content in Engineering and Geological Sciences.

The programs identified above also graduate Masters and PhD students who work in the petroleum industry.

Source: Data provided by Assistant Professor C. Hawkes, Department of Civil and Geological Engineering, University of Saskatchewan

#### **4.2.5 University of Regina:**

The Faculty of Engineering at the University of Regina offers accredited Bachelor of Applied Science degrees in several disciplines including Petroleum Systems Engineering. For graduate students the faculty also offers Master and Doctorate degrees in all programs.

Graduates from the Petroleum Systems Engineering program are employed in energy-based production, exploration, drilling and recovery, and surface treatment management.

The University of Regina also houses the Petroleum Technology Research Centre (PTRC). PTRC is a not-for-profit research and development organization founded in 1998 by Natural Resources Canada,

Saskatchewan Industry and Resources, Saskatchewan Research Council and the University of Regina, with support from the western Canadian oil and gas industry.

A number of the innovative projects initiated and managed by PTRC are described in Section 7.1 of this study.

#### **4.2.6 Private Training Providers:**

Additional training services available are through the private training institutions that offer programs directed at specific occupations within the oil and gas industry. The entry requirements for these programs are often not as rigorous as those of the public training institutions as they are directed at a specific competency. Examples of industry specific training services available include:

**Enform:** Enform is the training, certification and health and safety arm of the upstream oil and gas industry. Enform was created in 2005 by the merger of the Petroleum Industry Training Service (PITS) and the Canadian Petroleum Safety Council (CPSC). Enform is owned, directed and partially funded by six upstream petroleum industry trade associations. Enform offers programs and services in the following areas:

- Technology Courses – engineering, production, drilling, well service and petroleum fundamentals.
- Safety Courses – hazardous substances, driver training and safety management.
- Environmental Courses – land management, reclamation and waste/spill management.
- Career Development Courses – pre-employment and competency assessment.
- Distant Education Courses.
- Health and Safety Certificate of Recognition Program.
- Safety Services and Resources.

**The Petroleum Competency Program (PCP)** – managed by the Petroleum HR Council, PCP will assess and certify the ability of workers to perform specific activities to agreed upon expectations. The PCP is based on the standards of competence developed by the industry itself and is intended to build professionalism and standards of performance within the industry while respecting the existing or planned criteria of individual companies.

Candidates judged competent by a qualified assessor receive a renewable certificate of competency from the Petroleum HR Council and Enform..

## 5.0 OIL AND GAS SECTOR WORKFORCE DEMAND

### 5.1 *Current and Projected Workforce Demand:*

The issue of workforce shortages ranks as the number one issue (out of 42 issues) identified by private and public sector managers and leaders according to a study conducted by the Canadian Labour and Business Centre and presented in a 2005 publication entitled "the Viewpoint Survey".

Within the private sector, trades occupations, general labourers, front line supervisors and technicians were cited as being in greatest shortage.

In Saskatchewan 44% of survey respondents are experiencing current labour shortages and 53% are projecting increased shortage in the immediate future.

Although the survey included several sectors of the economy, it can be reasonably assumed that the oil and gas sector will be reflected in these results.

### 5.2 *Critical Labour Shortages:*

Research on the upstream oil and gas industry and information generated by direct key informant interviews with employers identified the major current and projected workforce shortages in the following occupational categories:

- **Helpers, Labourers, and Semi-skilled workers;**
  - Drilling – Floorhand/Leasemen/Rotary Helper/Roughneck/Roustabout
  - Seismic-Jug Helper/Jug Hustler/Jug Hound/Line Slasher/Recording Crew Helper/Seismic Helper/Seismic Shooter/Seismic Vibrator Helper
  - Pipeline Transportation: Maintenance Utility Worker/Painter/Pipeline Maintenance Worker/Pipeline Rehabilitation Worker/Station Helper/Terminal Helper
  - Well Services: Floorhand/Helpers/Oilfield Labourer/Service Rig Helper/Service Rig Roughneck/Shop Hand/Shop Help/Swamper
- **Trades: (Apprenticeable)**
  - Crane Operators
  - Heavy Duty Mechanics/Technicians
  - Industrial Electricians
  - Insulators
  - Machinists
  - Millwrights
  - Rig Technicians
  - Welders
- **Technicians:**
  - Chemical Technicians
  - Electrical Technicians
  - Geological, Seismic and Mineral Technicians
  - Oil and Gas Transportation Services
  - Warehouse Technicians
  - Well Testing Service Supervisors

- Operators
  - Control Centre Operators
  - Drilling Rig Operators – Derrickhand/Derrickman/Directional Driller/Driller/Motorhand/Mud Logger/Rig Manager/Toolpush
  - Field Production Operators – Battery Operator/Field Operator/Production Operator/Production Coordinator/Steam Assisted Gravity Drainage Operator
  - Heavy Equipment Operators
  - Plant and Facility Operators
  - Seismic Operators

Although workforce shortages have not been identified as critical in all of these occupational categories, the list is representative of the variety of skills, trades and services required by the industry. These occupations parallel the Petroleum HR Council classifications as presented in the publication "Key Job Families and Occupations of the Upstream Petroleum Industry".

## 6.0 OIL AND GAS SECTOR WORKFORCE SUPPLY

### 6.1 *Potential Workforce Supply Sources:*

Given that Saskatchewan has reached virtual full employment as of January 2007 the sources of additional labor are somewhat limited however there are several targeted initiatives which can be implemented in a collaborative approach by the industry, government, and training institutions. These include:

- An aggressive plan to attract youth and under-represented workers to the industry workforce.
- Repatriation of workers who have left the Province;
- Engagement and recruitment strategies targeting under-represented labour sources with particular emphasis on the potential workers currently not actively seeking employment;
- Retraining and/or retention of older workers;
- Immigration and Settlement recruitment initiatives.

#### 6.1.1 *Aboriginal Workforce Supply Sources:*

This potential workforce supply represents the largest under-represented group resident in the Province. As previously pointed out in the demographics section of this report, the aboriginal population will represent approximately 40% of the new entrants of the employable age labor force in Saskatchewan within the next two decades. To engage and attract this constituency to the oil and gas industry there are several historical and cultural issues which must be understood and addressed by the industry, governments, and training institutions. These include:

- An intergenerational history of isolation, exclusion, and dependency which must be addressed in an "aboriginal specific" recruitment and training plan;
- Pre-employment and job readiness training for the aboriginal workforce is an essential element of any targeted training initiative;
- Aboriginal students generally do not gravitate to the Math and Science disciplines;
- Aboriginal people have strong ties to their community and family – they do not, as a general rule, feel comfortable with long absences from this environment;
- Aboriginal workers function most effectively when they have sufficient numbers in a workforce to provide support to one another and deal with issues of alienation and discrimination;
- Companies, facing enormous pressure to achieve profits in the shortest possible timeframe, tend to follow proven methods of workforce recruitment and to stay in the conventional "comfort zone" when it comes to human resource development.

Attitudinal change is essential for all parties. The aboriginal leadership and the educational and support professionals such as teachers, counselors, and employment centres are willing partners to any strategic initiative which will draw the aboriginal labour force into the mainstream economy.

#### 6.1.2 *Women as a Workforce Supply:*

Statistics Canada Labour Force Survey (2005) identifies that the employment of women in the Saskatchewan resource sector comprise 11% of the total workforce. Although there is no current data separating the oil and gas sector from the mining sector labour force composition, it can reasonably be assumed that this percentage is representative of both industries.

Advanced technologies which mitigate the physical demands of many of the oil and gas industry occupations, coupled with the emerging trend of increased women enrollments in non-traditional training



programs, trades and professions, indicate that there is a strong potential to attract more women employees into the upstream oil and gas workforce.

Anecdotal responses provided in the Key Informants Surveys indicate that very few employers have specifically targeted women as a potential labour supply, and that there is a sense that "family-related" issues such as child care, day care and mobility, will need to be addressed in attracting more participation in the workforce.

Models of employment diversity initiatives which may be useful in developing a plan to expand the participation of women in the industry workforce are presented in **Appendix B**.

### 6.1.3 Immigration and Settlement:

As earlier referenced, Immigration will likely become the only source of population gain in Canada by the year 2030 according to the Statistics Canada 2006 census snapshot.

In 2005, the provincial government announced a bold immigration strategy to welcome 5,000 immigrants annually through the Saskatchewan Immigrant Nominee Program (SINP) by 2008. The provincial immigration budget was increased from \$1.7 M in 2004-05 to \$8.5 M in 2007-08 for an expanded provincial role in attracting and settling new immigrants in the province. The province is already one year ahead of schedule in delivering the strategy. In 2006-07, Saskatchewan issued 1,255 nominations to approximately 3,000 potential immigrants (including accompanying members of the principal applicants) who intend to settle in the province.

The SINP, which operates under an agreement with the federal government, can provide an alternate and quicker means of entry into Canada for citizens of other countries. This program allows Saskatchewan to nominate applicants, who qualify under criteria established by the province, to the federal government for landed immigrant status. The SINP offers:

- The ability to select applicants whose skills and abilities best fit the province's needs;
- Consideration of applications that may ordinarily not qualify under federal immigration criteria;
- Application processing times that are faster than other federal immigration classes and;
- Assistance from Provincial Immigration Officers who are readily available to explain program requirements and processes.

Current SINP eligibility criteria reflect the specific needs of Saskatchewan's labor market and economy – under the following categories for nomination: Skilled Workers, Family Members, Long Haul Truck Drivers, Health Professionals, Entrepreneurs/Farm Owners and Operators and Foreign Students.

The federal government also recently announced improvements of the Temporary Foreign Worker Program to make it faster and easier for Canadian employers to meet their labour force needs (see Federal Government news release at <http://www.cic.gc.ca/english/press/07/2007-02-23.html>)

To facilitate the settlement, integration and retention of the workers and their families in their community and workplaces, a community/employer receiving newcomers must develop a Settlement Plan. The Settlement Plan addresses immigrants' needs such as orientation to the community/workplace, affordable housing, spousal employment, children's placement in schools, health care, transportation, language training and interpretation services, employment bridging programs, credential recognition/apprenticeship issues and access to recreational programs and services. The settlement planning process begins pre-arrival of the immigrants and involves stakeholders in the community and workplace. The Immigration Branch can help facilitate the settlement planning process.

#### **6.1.4 Other Under-Represented Sources of Workforce Supply:**

Albeit less significant in terms of potential employee numbers, the upstream oil and gas workforce development plan should also examine ways in which persons with disabilities and non-aboriginal visible minorities can be included in the plan.

An employment diversity initiative would include ways in which this source of labour supply may be included in the workforce development plan as outlined in **Appendix B**.

#### **6.2 Current Government Initiatives:**

Both Provincial and Federal governments have a variety of publicly funded grant and loan programs to support training, skill development, and entrepreneurial initiatives.

Commencing in December 2006 the Government of Saskatchewan announced a number of additional major initiatives to enhance and promote labor force training and development in the Province:

- The first Saskatchewan Youth Summit was convened on February 2007 in Saskatoon as part of the Provincial strategy to attract and retain young people in the Province;
- A \$52 million increase in funding to expand the training capacity and to create additional training spaces in the post-secondary training institutional systems in the Province;
- A dedicated promotional campaign to attract workers who have left the province to return to work in Saskatchewan;
- The Government of Saskatchewan announced in February 2007 intent to implement a large multi-year road improvement and new road construction program in support of increased economic and resource development activity;
- On March 29, 2007 the government of Saskatchewan announced an additional allocation of \$4.2 million allocation of training funds to the Saskatchewan Indian Institute of Technologies and the Saskatchewan post-secondary institutions (Government of Saskatchewan, Press Release March 29, 2007).

#### **6.3 Barriers:**

Research on the upstream oil and gas industry, and information generated by direct key informant interviews with employers have identified the main barriers in recruitment and retention of employees. These are:

- Competition from other companies or other sectors of the economy;
- Unskilled/untrained workers;
- Physical demands;
- Gender bias;
- Lack of specific industry career opportunities counseling in the educational systems and;
- Limited knowledge of, or access to, province-wide employee recruitment programs and services such as the Government of Saskatchewan and local area job-search web sites.



## 7.0 EMERGING OIL AND GAS SECTOR TECHNOLOGIES

### 7.1 *New Technology:*

Emerging technologies in the oil and gas industry will have an impact on future workforce requirements, particularly in the professional and technical occupational categories.

#### ***Polygeneration:***

Saskatchewan is currently evaluating the feasibility of developing a gasification-based polygeneration facility near Belle Plaine, Saskatchewan, approximately 50 km. west of Regina. The proposed facility will convert low-value feedstock into several energy products, including steam, nitrogen, carbon dioxide (CO<sub>2</sub>), hydrogen, and electricity.

- An adjacent fertilizer plant would use the hydrogen, nitrogen, steam, and CO<sub>2</sub> in the production of nitrogen-based fertilizers;
- An adjacent potash solution mine would utilize steam in both its mining and drying processes;
- Large quantities of CO<sub>2</sub> will be captured, for sequestration or for enhanced oil recovery in southeastern Saskatchewan; and
- The facility will produce about 300 MW of electricity.

#### ***Clean Coal:***

SaskPower is currently evaluating the feasibility for developing the world's first clean coal power plant. The plant will produce about 300 MW of electricity. The plant will also capture over 90% of the carbon dioxide (CO<sub>2</sub>) emissions for sequestration or for enhanced oil recovery. The plant is expected to cost approximately \$1.5 billion, continuing Saskatchewan's use of its 300 year supply of mineable lignite coal.

#### ***Petroleum Technology Research Centre Initiatives:***

A number of innovative projects also currently being managed by the PTRC in Regina include:

- Weyburn Project – methodology, if applied on a worldwide scale, could eliminate between one-third to one-half of the CO<sub>2</sub> emissions from the atmosphere. This is a PTRC feature project which provides expertise on securely storing CO<sub>2</sub> underground while reviving oil production;
- Joint Implementation of Vapor Extraction (JIVE) Project – a multi-million dollar project exploring ways to minimize the environmental impacts of oil production;
- Heavy Oil Post-Cold Flow – new technologies to address worm-hole formation in reservoirs following primary production with sand – to mitigate its effects or take advantage of worm-holes to enhance recovery;
- Miscible / Immiscible Gas Injection – developing expertise in gas flooding for light to heavy oil using CO<sub>2</sub>, flue gas, and other solvents;
- Near-Wellbore Conformance Control – new techniques to improve/stimulate productivity by modifying the environment around failing wells (eg. – gel and microbial plugging processes to block excessive water production or thief zones.);
- Enhanced Waterflooding technologies;
- Stratigraphic and Hydrogeologic Framework of Western Saskatchewan – regional-scale geological cross sections and maps of the major stratigraphic units from basement to near surface in an area that extends from the United States border north to Township 52 and from

Range 1 west of the Third Meridian to the Alberta border (a corridor in western Saskatchewan extending from the United States border to Lloydminster);

- Clean oil recovery technology – Saskatchewan is investing \$1.8 million over three years (commencing April 2006) to help develop environmentally sensitive, energy-efficient enhanced recovery processes for heavy oil reservoirs.

## 7.2 Oil Sands Exploration:

Oilsands Quest Inc. (formerly CanWest Petroleum Corporation) is the only firm currently conducting a provincial exploration program on its oil sands permits, which are located in northwest Saskatchewan, directly across the border from the Athabasca oil sands in Alberta. Oilsands Quest is focusing on proving the extension of commercially viable deposits of oil sands from Alberta into Saskatchewan.

On January 16<sup>th</sup>, 2007 Oilsands Quest Inc. released the following information in the form of an "investor information" news release:

- Drilling results to date in its winter 2006/07 exploration program indicates an 87% success ratio. Between November 3, 2006 and January 15, 2007, a total of 31 holes were drilled and, of these, 27 were cored through bitumen-bearing McMurray formation;
- The company is making progress toward its goal of 100 delineation holes and holds permits for up to another 150 exploratory holes;
- The company expects to announce detailed information such as estimates of bitumen resource volumes, reservoir characteristics and alternatives regarding commercial potential by October 2007.

Although the oil sands activity in Saskatchewan has little current impact on workforce demand (3–8 drilling rigs during exploration), the future workforce requirements could be enormous and must be included in the workforce development plan since many of the occupational categories will be identical or similar to those currently required in the upstream oil and gas activity in the province.

When the Saskatchewan Oil Sands resources reach the extraction and production stages, the required workforce, in terms of occupational categories, will be similar to those which exist in the Alberta Oil Sands industry. This factor will need to receive consideration in the overall Saskatchewan oil and gas sector workforce development plan.

## 8.0 KEY INFORMANT INTERVIEW RESPONSES – CURRENT INDUSTRY WORKFORCE PARTICULARS

### 8.1 *Project Background:*

Fast Consulting was engaged by Saskatoon Aboriginal Business Association Ltd to conduct interviews within the Saskatchewan upstream oil and gas industry to provide insights into the human resources needs of companies working in this sector.

The research has several objectives. The first is to provide a scan of barriers to accessing employment and to better understand barriers to employment. The second is to scan industry employer recruitment practices and workforce retention rates, including training needs and future training needs and finally, to define best practices within the above context.

The survey questionnaire is appended to this report as **Appendix D**.

Additional verbatim comments are provided in **Appendix E**.

#### 8.1.1 *Methodology:*

Fast Consulting conducted one-on-one interviews with key decision-makers from various oil and gas sectors – senior human resource/administrative personnel and/or company owners. Interviewees were selected to reflect the approximate representation of sectors participating in the oil and gas industry in Saskatchewan. Interviews have been completed with 43 companies.

Due to the sample size, the survey cannot be assigned statistical validity; however, it includes several sectors of the upstream oil and gas industry.

Companies included in these results presently have 2727 employees working either full-time or part-time in Saskatchewan.

#### **Key Informant Interviews (N=43)**

Completed responses were received from members of the following associations:

Canadian Association of Oilwell Drilling Contractors (CAODC)

Canadian Association of Petroleum Producers (CAPP)

Canadian Energy Pipeline Association (CEPA)

Petroleum Services Association of Canada (PSAC)

Canadian Association of Geophysical Contractors (CAGC)

## 8.2 Current Snapshot:



Almost all (93%) of the companies who participated in the interview process have operations in southern Saskatchewan. 26% also have operations in Central West Saskatchewan, and 12% also operate in Central East, while 9% also operate in North West Saskatchewan.

A map detailing the Western Canadian Sedimentary Basin is included in Section 2.6 of this report.

### 8.2.1 Employment Numbers:

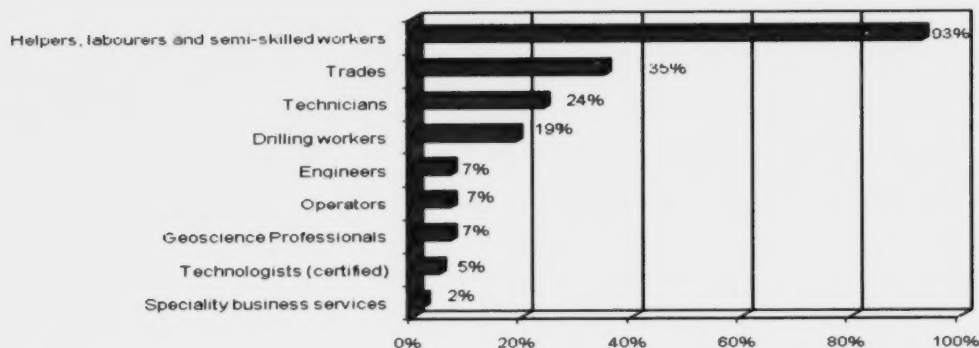
*Estimate how many full-time, part-time, temporary and seasonal employees work for your company in Saskatchewan.*

On average companies have 49 full time employees with 3.5 vacant full time positions each year. These same companies have 8 part time employees and 9 seasonal or temporary employees with an average of 2 to 3 vacant positions.

Number of Employees Grouped	Number of Responses (Frequency)	% Percent
1 to 10 employees	10	23%
11 to 20 employees	7	16%
21 to 50 employees	13	30%
51 to 100 employees	10	23%
over 100 employees	3	7%
Total	43	100%

Companies included in these results have 2,727 employees working either full-time or part-time in Saskatchewan.

Can you select the key job families that best describe the types of employees your company directly hires in Saskatchewan?



Overall, the majority (93%) of companies indicate they employ helpers, labourers and semi skilled workers who complete manual labour duties and/or operating specialized equipment.

Another third (35%) employ trade personnel who carry out industry day to day functions and/or keep equipment and facilities in reliable working order and 24% employ certified technicians that complete installations, servicing, monitoring and troubleshooting duties.

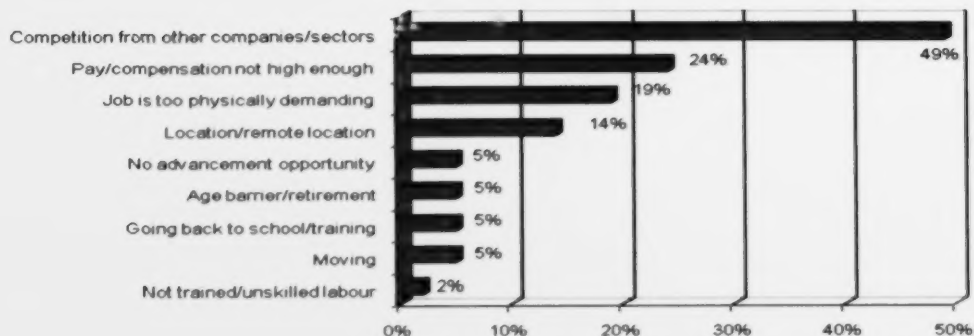
Specific occupations in these job family groups are identified in Section 5.2 of this study.

### 8.2.2 Employee Shortages:

At present is your company experiencing any employee shortages?



Over half (54%) of respondents are presently experiencing an employee shortage. They are more likely to experience a shortage among general helpers, labourers or semi skilled workers.

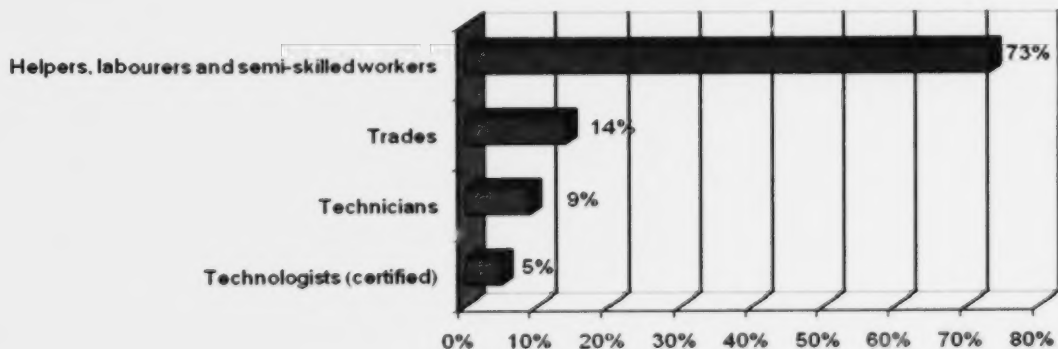


About half (49%) of respondents indicate employees leave their company for work with other companies in the oil & gas sector as well as companies in other sectors, mainly in construction and transportation.

Another quarter (26%) leave for higher pay, while 14% leave because the job site location is too remote or too far away from home.

### 8.2.3 Present Employee Shortage:

*What key job families does your company experience the most critical shortages?*

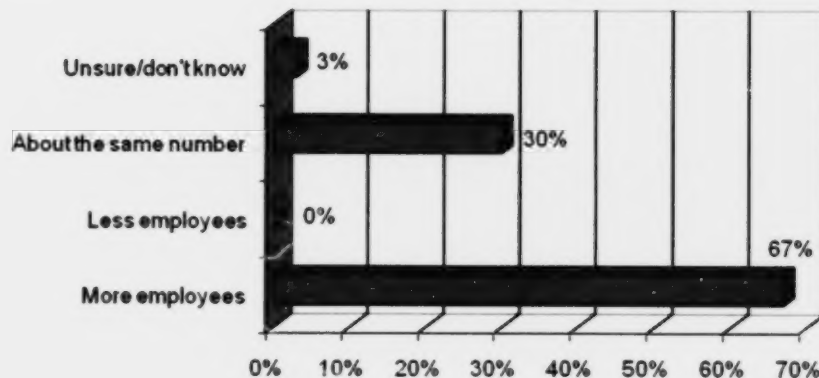


Most companies (73%) experience job shortage among helpers, labourers and semi-skilled workers which are the majority of employees hired.

Other shortages occur in trades (14%) without differentiating if specific trade positions experience shortages and with technicians (9%) and technologists (5%).

### 8.3 Future Hiring Plans:

*In the next five years do you expect your operations in Saskatchewan will require more employees, less employees about the same number of employees?*

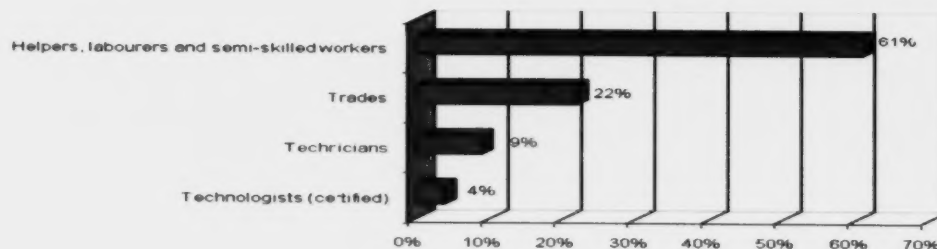


*"Alberta may slow but Saskatchewan will pick up in my opinion."*

The majority (67%) of respondents expect to hire more employees in the next five years.



*What key job families does your company expect it will experience the most critical shortages?*

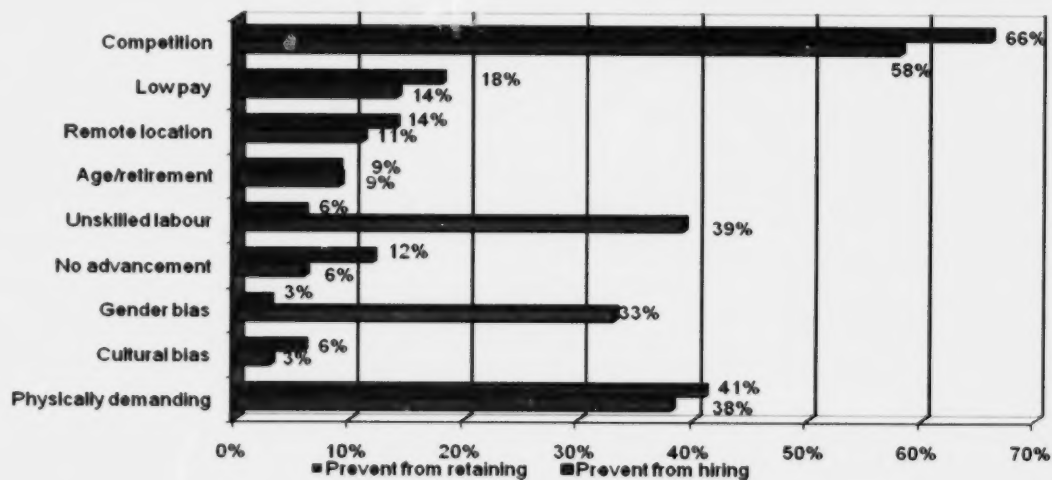


Most companies (61%) expect to experience job shortage with helpers, labourers and semi-skilled. Others expect shortages in trades (22%), technicians (9%) and technologists (4%).

## 8.4 Hiring:

### 8.4.1 Barriers to Hiring and Retaining Workers:

*Can you tell me if any of the following barriers prevent your company from hiring or retaining employees?*



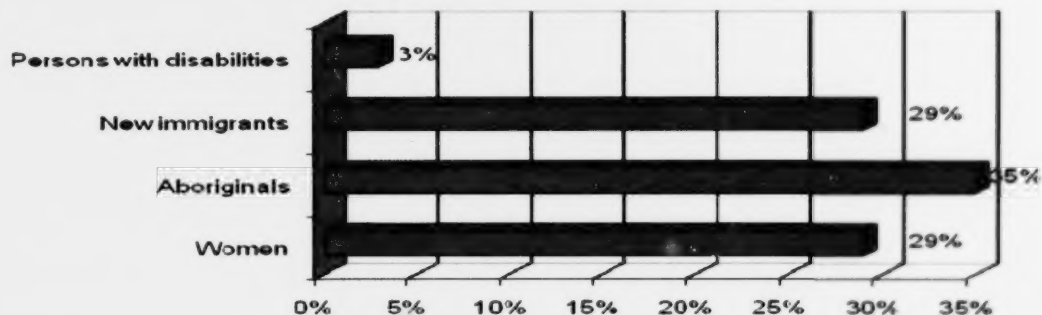
The majority (58%) of respondents indicate competition is the number one barrier they experience when hiring employees and 66% indicate this is the number one barrier when retaining employees.

Over one third (39%) of respondents suggest that potential employees do not have the skills the company requires while 41% indicate the physically demanding nature of the job often prevents them from retaining employees.

For respondents who actively recruit aboriginal employees, 71% say an unskilled or not trained labour pool prevents them from hiring aboriginal employees.

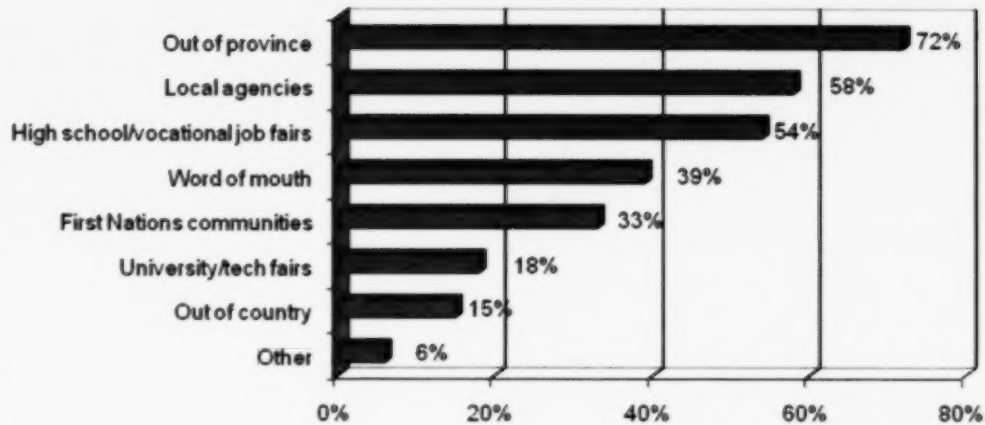
#### 8.4.2 Recruitment:

*Has your company used any of the following labour sources to successfully increase employment and promote career development in the oil and gas industry?*



Overall, respondents actively recruited from most available work pools with the exception of the disabled. Respondents indicate the physical nature of some job duties make it difficult to hire persons with disabilities.

*Has your company used any of the following to successfully increase employment and promote career development in the oil and gas industry?*

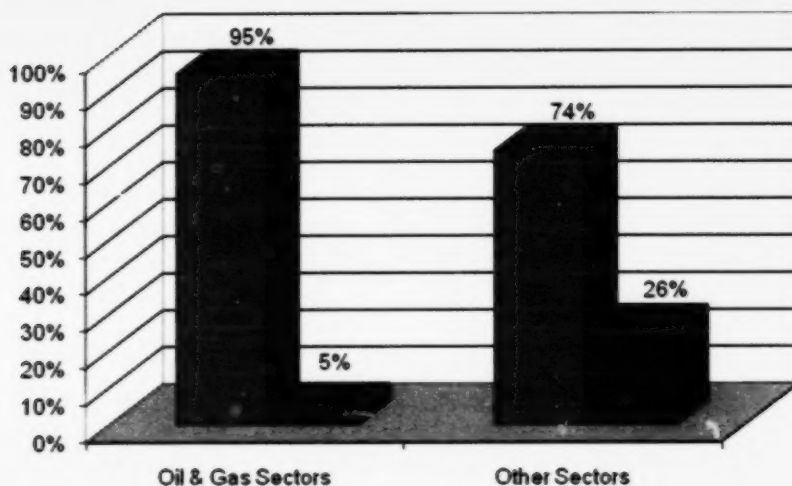


The majority (72%) of respondents have actively recruited employees from out of province, while only 15% have actively recruited employees from out of country.

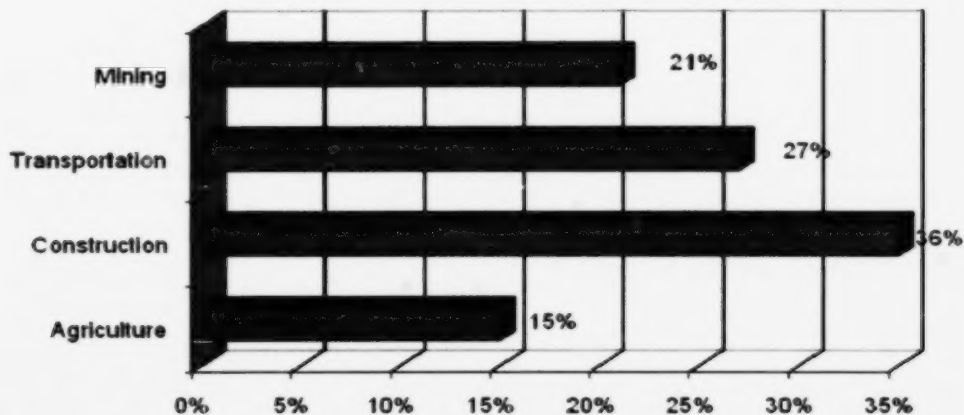
Over half (58%) recruit employees using local agencies and half (54%) recruit employees from high schools while 39% rely on word of mouth. Another one third 33% actively recruit from First Nations communities and only 18% actively recruit from University/Technical school and job fairs.

### 8.4.3 Competition:

When hiring does your company actively compete against other companies in the oil & gas sector or companies in other sectors?



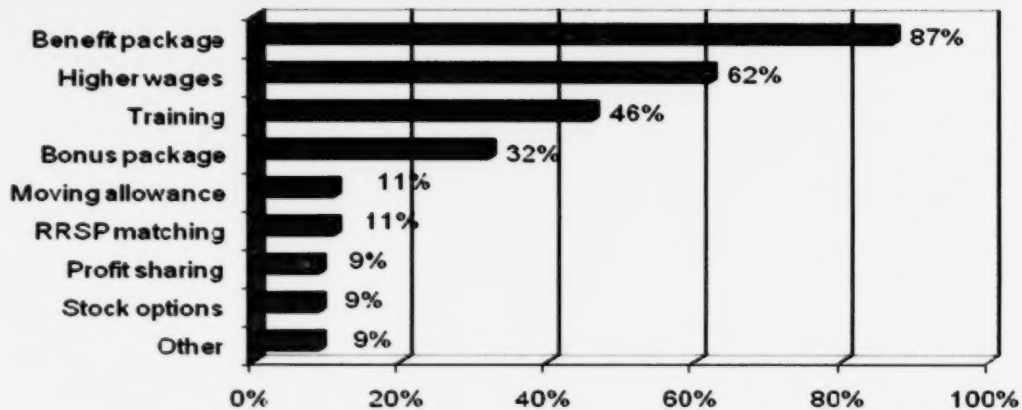
The majority (95%) of companies indicate they actively compete against other companies in the oil & gas sector for employees and 74% actively compete against companies in other sectors, specifically the transportation (27%), construction (36%), mining (21%) and agriculture (15%) sector.



## 8.5 Retention & Training

### 8.5.1 Benefits:

*What types of benefits or attractions has or does your company offer?*

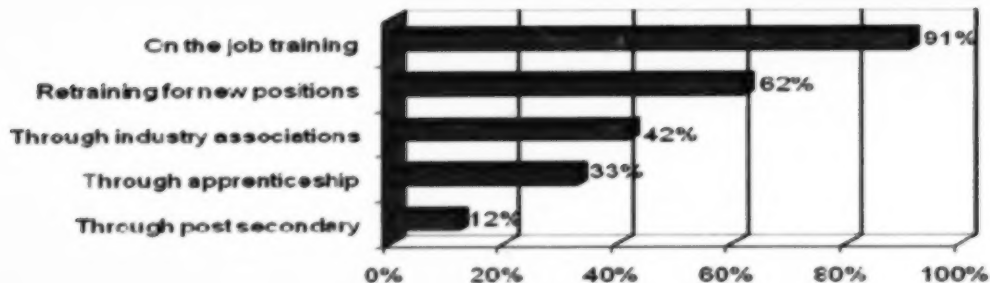


Almost all companies offer some type of benefits to attract employees. The majority (87%) offer a benefits package and over half (62%) offer higher wages, while 46% offer extensive training to attract employees.

Companies also indicate they also offer RRSP matching program, stock options, home every night and deferred profit sharing to attract employees.

### 8.5.2 Training:

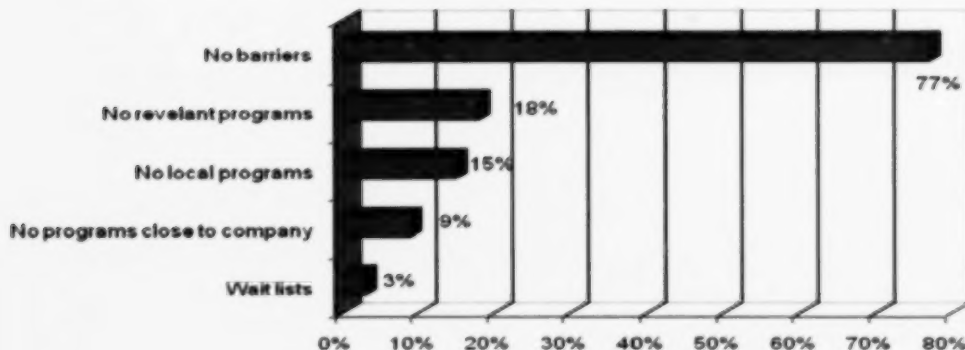
*What type of training does your company offer to new or existing employees?*



All of the companies offer some sort of training. In most case they offer on- the- job training (91%), and about half (62%) of companies offer retraining programs to move employees from one position to another.

Almost half (42%) offer to send employees to training offered by industry associations while 33% offer to send employees to training offered by apprenticeship programs. However, respondents did not supply details about the specific training received through outside programs.

*Do you see any existing barriers that prevent or reduce the number of training opportunities for potential employees?*



The majority (77%) of companies indicate there are no existing barriers that prevent or reduce the number of training opportunities for potential employees.

*Have the Saskatchewan training institutes such as SIAST, regional colleges, universities and apprenticeship programs met your needs for qualified employees?*



The majority (64%) of companies indicate the Saskatchewan training institutes met their needs for qualified employees.

However, respondents indicate flexibility in training schedules and times could open the opportunity for potential employees to work and receive training simultaneously. They also suggest increased customer service would improve the communication between those training the employees and those hiring the employees.

*What improvements would you like to see the training institutes implement to better meet your needs for qualified employees?*

#### **More Flexible Program Schedule**

- 'Making due dates too soon and guys have to take off at the most inconvenient time.'
- 'Programs are available, but students don't want to wait to take them on semester breaks & weekends; they should be offered in school as credit courses.'
- 'Only one man in Saskatoon teaches Boom Truck and Pickers-there's no program in SIAST.'

#### **Improve Communication Between College and School**

- 'The people that are training have to be more approachable – more contact.'
- 'The programs are awesome but when I have a question, I can't readily get an answer.'
- 'More customer service/more local teaching, less regional.'
- 'More our initiative than the school's. We get a lot of people through techs and university in Alberta, not so much in Saskatchewan.'

#### **Other**

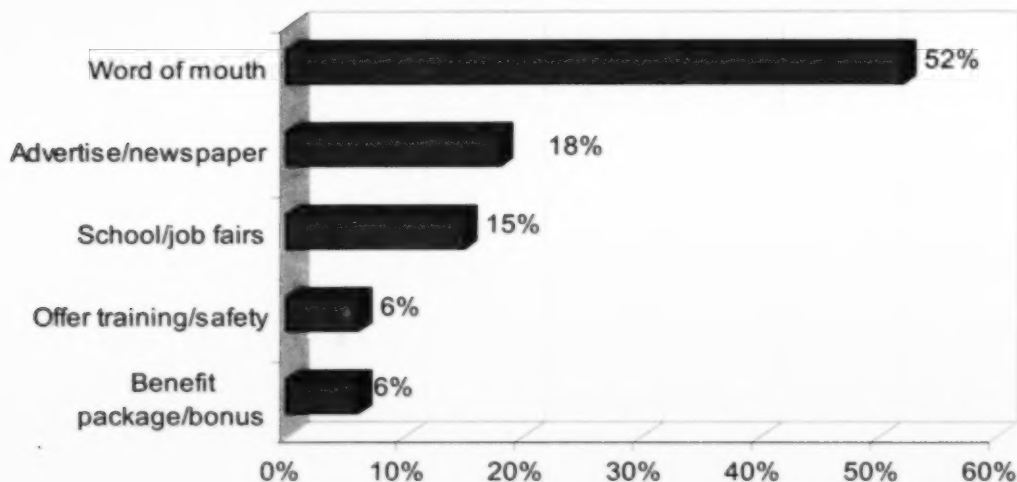
- 'CAODC Training is done on computers and to some this can be complicated to older individuals.'
- 'That depends on the political climate.'
- 'Market forces will decide what type of training is needed.'



## 9.0 KEY INFORMANT INTERVIEW RESPONSES – BEST PRACTICES

### 9.1 Recruitment:

*Can you give us examples of how your company actively recruits new employees to your company?*

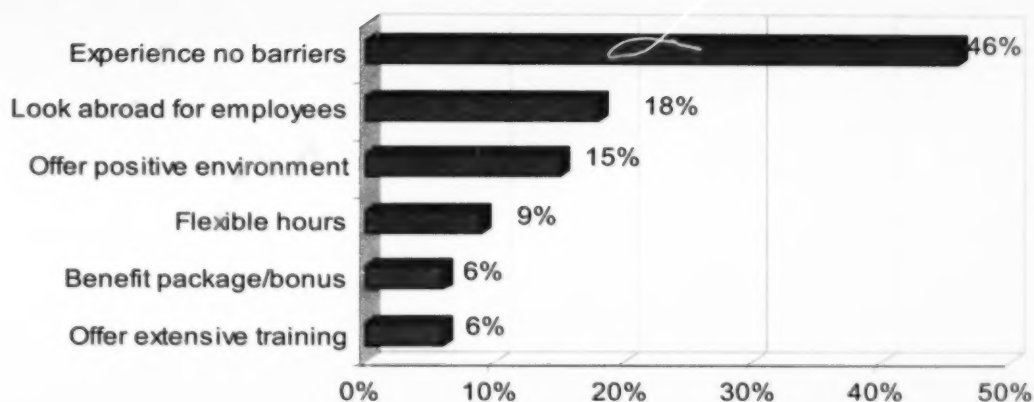


*'I've worked in south east Saskatchewan all my life and the managers have too. Reputation makes people want to work for us. We're a small company and we know all our employees and their wives.'*

The majority (52%) of companies indicate word of mouth is an effective method to recruit new employees. Another 18% advertise in newspapers both across the country and in Saskatchewan, while 15% recruit employees through school and job fairs.

To actively recruit employees companies offer on-the-job training programs to high school students and people in the unskilled labour force. They also recruit by offering benefit packages, competitive wages, profit sharing, safety programs and maintaining high safety levels.

Please explain how your company has overcome barriers when recruiting new employees?



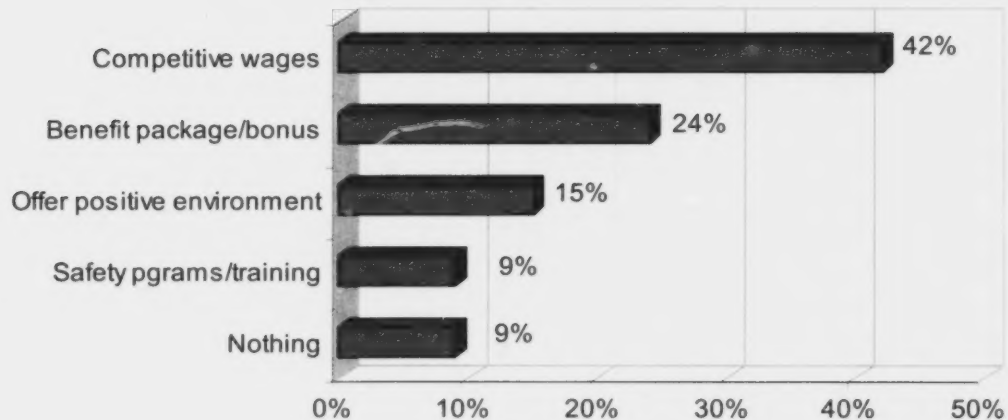
*'Our company has developed new strategies that look at immigration, higher wages and bonuses.'*

Almost one half (46%) of companies indicate they experience no barriers when recruiting new employees.

Less than one quarter (18%) indicate they look to other provinces and/or countries to recruit new employees, while 15% say they recruit employees by offering a positive work environment. Another 9% offer flexible work hours as a recruitment incentive.

## 9.2 Retention:

Can you give us examples of how your company retains employees once they have been hired?

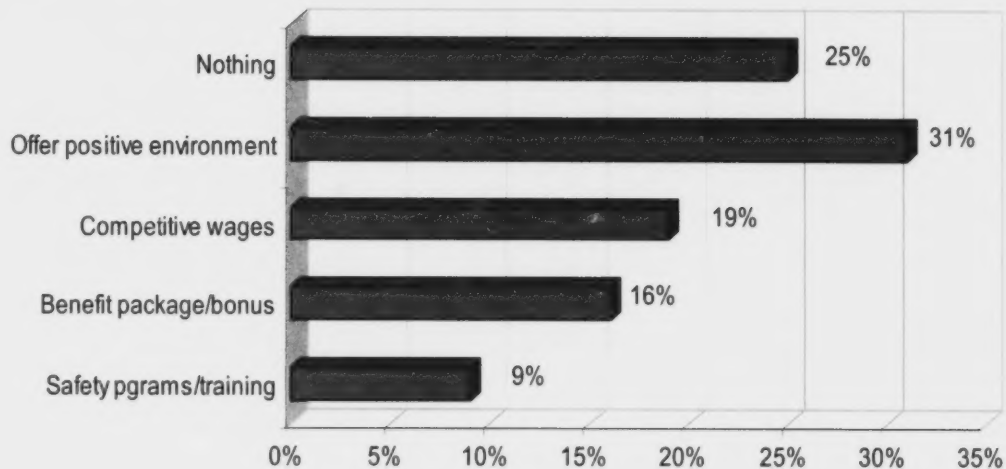


*'People work for people. We foster a good and safe environment.'*

The majority, (42%) of companies indicate offering competitive wages helps them to retain employees, while others offer benefit or bonus packages (24%) to retain employees.

Several companies (15%) suggest creating a positive work environment, treating employees fairly, showing employees respect or treating them like family increases retention. While another 9% encourage retention by promoting and maintaining safety standards.

Please explain how your company has overcome barriers when retaining employees?



*'There are opportunities for employees all over the industry and in the western market. So we offer training and try to make employees feel like stakeholders, like they're a part of the company.'*

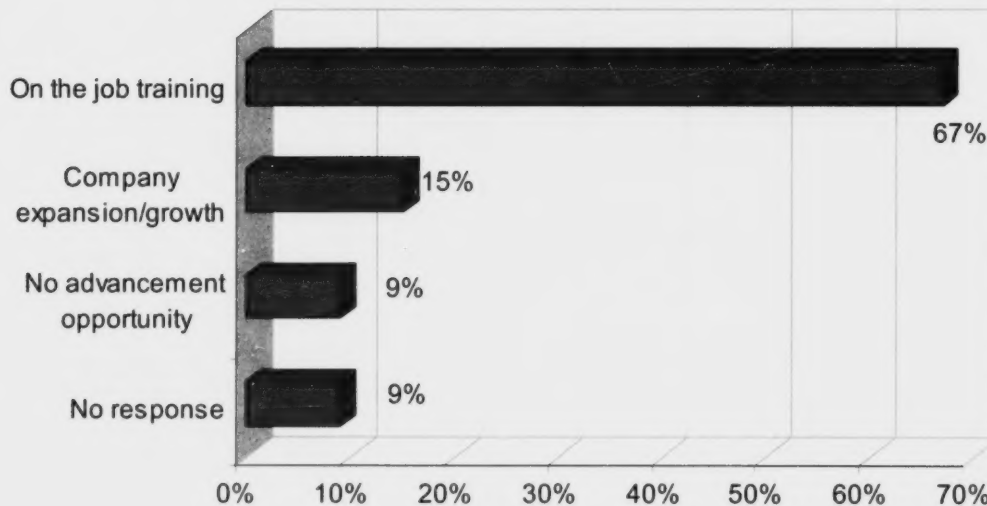
One quarter (25%) of companies indicate they have no policy to address barriers.

However, the majority, (31%) indicate they have overcome barriers by offering a positive work environment including: offering transportation to and from work, including clothing allowance or equipment allowance in wages, offering flexible hours and promoting fair and respectful management.

Approximately 19% offer competitive wages.

### 9.3 Career Development:

*Can you describe the career development strategies and policies your company has developed to advance employees?*



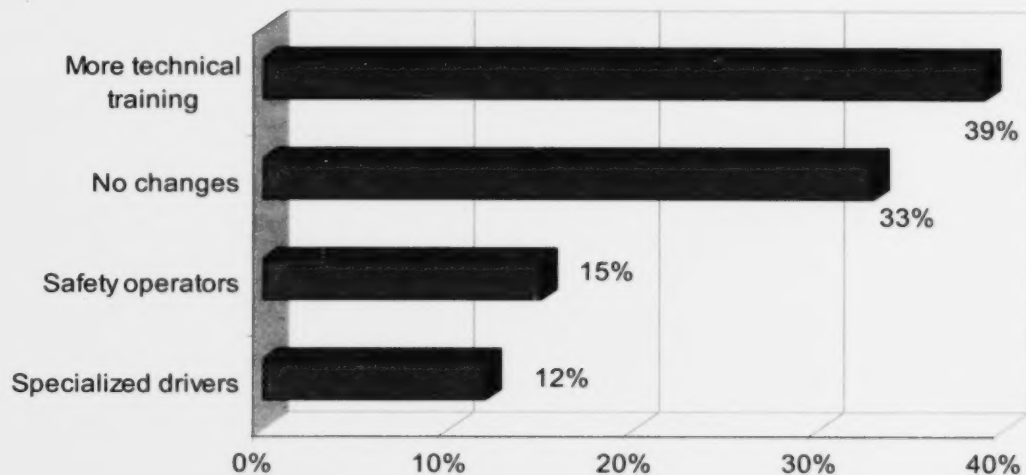
*'We train "in-house" now for a number of different positions and in a number of different ways. We tend to train for operating positions. This slows things down a bit but fills our needs.'*

The majority (67%) of companies indicate they offer on the job training to advance employees, while 15% grow or expand the company to create more positions.

Those who offer on the job training mainly indicate they offer drivers license training or drivers' license upgrade and programs targeted to fill specific jobs in their company.

#### 9.4 Future Training Requirements:

Can you tell us what types of emerging occupations you foresee your company will need trained employees for in the next 1 to 5 years?

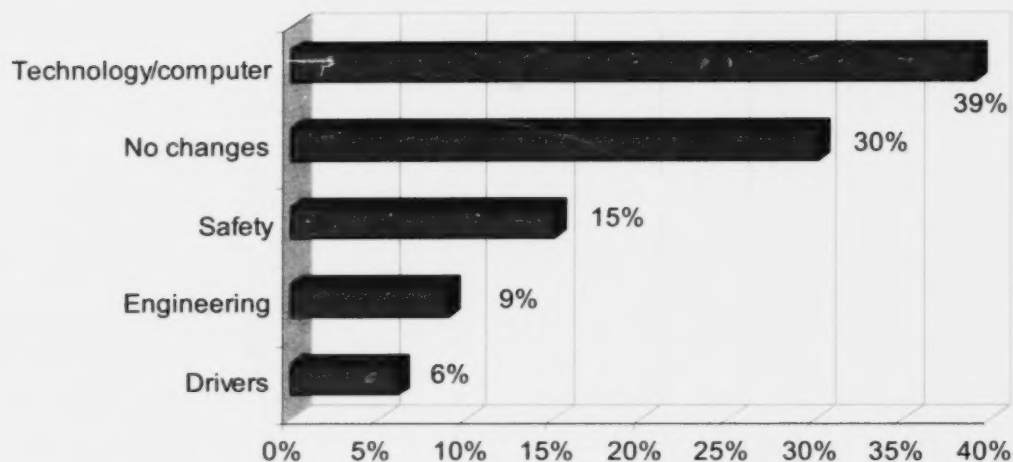


*'I think we'll see major advancements to equipment and technological aspects of the industry while the physical or strength aspect will fade away as systems become more automated.'*

Companies did not specifically name emerging occupations they expect to see in the next 1 to 5 years; however, over one third (39%) expect employees will need more technical training to work and operate equipment in all areas of the oil and gas sector.

Another 15% expect safety regulations and increased safety protocol will require employees to have specialized safety training and 12% expect to see a need for specialized drivers.

What type of training do you predict future employees will be required to have for these future jobs?



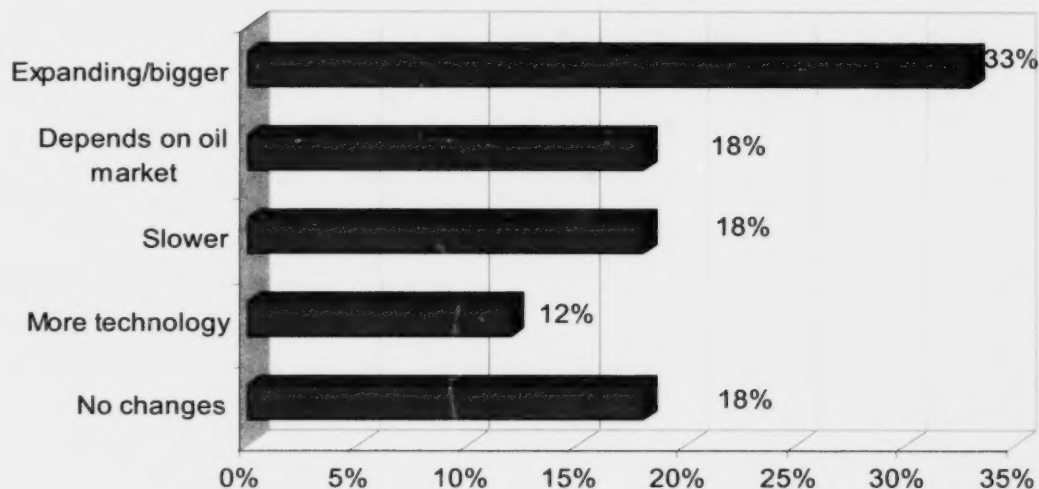
*'We have always hired farm boys and they will no longer be around. Plus I can see we'll need more "Nintendo" kids, guys trained to handle the "joystick" and handle technology, etc.'*

Over one third (39%) of companies predict future employees will require specialized technology and computer training as systems become more automated. Companies also expect to see a greater need for safety training.



### 9.5 Future Workforce Needs:

*If you had to predict how would you say the future of the industry will be in the next 10 years?*



*'The industry is moving forward by leaps and bounds because of new drilling technology, which will enhance the industry.'*

The majority (33%) of companies expect the industry to expand and get bigger over the next 10 years, while 18% think any change will depend on the market demand for oil and 18% expect the industry will get smaller and slow down.

## 10.0 OPTIONS AND RECOMMENDATIONS

### 10.1 Introduction:

This section is based on the analysis of the upstream oil and gas industry research information combined with the information generated by the key informant interviews and focus group discussions. The options and recommendations selected for implementation by the project participants will provide a useful basis to assist in the development of a "go forward" action plan – ideally in a collaborative partnership approach among industry, government, and educational training and certification institutions and agencies.

#### **Specific Industry Workforce Industry Considerations for the Upstream Oil and Gas Workforce Development Based on Key Informant Interviews**

- The main workforce demand, current and projected, as identified in the key informant responses, is in three occupational categories: helpers, laborers and semi-skilled workers (93%); trades (35%); technicians and operators (24%);
- The main issue related to workforce retention is competition from other companies/sectors (66%);
- 54% of the employers surveyed experience current workforce shortages – in direct correlation with the occupational categories identified above;
- 67% of the employers surveyed project increased workforce demand – again in the same occupational categories;
- The principal barriers to hiring/retaining employees are competition (66%); unskilled/untrained workers (39%); physical demands (41%); and gender bias (33%);
- The majority of employers use a mixture of recruitment methods including employment agencies, advertising, and word of mouth;
- Almost all companies offer benefit packages, training support funding, and on the job training;
- The majority of the employers indicate that the Saskatchewan training and certification systems offer the complete required services.

**Significant Planning Considerations for the Upstream Oil and Gas Workforce Development Plan**

- The population of Saskatchewan has declined over the past decade with no natural growth projected;
- The predominant workforce population is approaching retirement age and will soon exit the labour force or will be looking to sell their businesses;
- Women and Aboriginals are the largest potential resident workforce supply source to the industry;
- Immigration represents a third large potential industry workforce supply source;
- Oil and Gas sector activity is increasing in Saskatchewan and most employers are experiencing current and projected workforce shortages;
- Oil and Gas workforce occupational demand is in heavy competition with other economic sectors and other provinces, particularly Alberta.

The following Matrices present options and recommendations for the development of an upstream oil and gas workforce plan. It is recognized that they may not be relevant or acceptable to all sectors of the upstream oil and gas industry and are presented as potential components of a "go-forward" workforce development plan.

## 10.2 Recruitment

### 10.2.1 Recruitment – Aboriginal Work Force Development

Aboriginal population is a large under-represented potential labour force supply to the upstream oil and gas industry.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
Technicians Operators Helpers Labourers Semi-skilled Workers Trades (Apprentices) Specialty Business Services	To fully engage aboriginal organizations, leadership, and educational systems and institutions to design and implement a targeted oil and gas work force development plan	(i) Encourage the establishment of a multi-party working group to coordinate consultations and prepare a work force development plan which will include aboriginal community engagement, recruitment, training and, possibly, entrepreneurial support initiatives.  The working groups may be province-wide or on a region-by-region basis and may be extended to focus on other under-represented workers.	Saskatchewan Canada Industry Federation of Saskatchewan Indian Nations (FSIN) Métis Nation Tribal Councils Can-Sask Employment Centres Post-Secondary Institutions Individual First Nations Saskatchewan Indian Training Assessment Group (SITAG) Aboriginal Human Resource Development Agreement Holders (AHRDA's)

- Aboriginal citizens currently comprise 18% of the available provincial workforce age population and this will increase to 35% by 2035.
- Aboriginal citizens of Saskatchewan will represent 40% of new entrants in the provincial labour force within two decades.
- First Nations are well organized at the local, Tribal Council, and provincial (Federation of Saskatchewan Indian Nations) level to develop partnerships with industry for recruitment and training.
- Métis are represented by the Métis Nation of Saskatchewan (MNS).
- Aboriginal Human Resources Development Council of Canada (AHRDCC) has a branch office in Saskatoon. AHRDCC is funded by the Government of Canada and has a number of programs which may be of assistance in industry recruitment initiatives.

## 10.2 Recruitment

### 10.2.2 Recruitment - Women

Women are a large under-represented potential labour force supply to the upstream oil and gas industry.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
Technicians Operators Helpers Labourers Semi-skilled Workers Trades (Apprentices) Specialty Business Services	<p>Development of a plan to inform women of the career opportunities now available in the industry as a result of reduction/elimination of equipment-physical impediments and occupational demands which once existed.</p> <p>Development of a targeted recruitment plan directed at attracting women into the oil and gas workforce and a range of support services.</p>	<p>(i) Initiate a targeted industry/government partnership initiative to identify the non-traditional occupational categories now available to women accompanied by a promotional campaign highlighting existing programs.</p> <p>(ii) Identify and promote the understanding of barriers which exist in the industry with respect to the employment of women. Build on existing industry employment diversity initiatives and support the development and implementation of best practice initiatives to encourage employers to focus on the recruitment of women.</p>	<p>Canada Saskatchewan Industry Petroleum HR Council</p>

- Women make up 46.6% of the total Saskatchewan workforce and are under-represented in the oil and gas sector at 11%.
- Technological advances have mitigated many physical occupational demands and present a number of opportunities traditionally not attractive to women.
- It is recognized that barriers exist with respect to the recruitment and employment of women, however, "family related" benefits to offset costs associated with child care, day care and transportation as examples, may prove to be attractive in some sectors of the industry.

## 10.2 Recruitment

### 10.2.3 Recruitment – Immigration and Temporary Foreign Worker Programs

Immigrants and temporary foreign workers are another large potential labour force supply to the upstream oil and gas industry.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
Professional Services Technicians Operators	<p>Development of a plan to identify which countries may best provide a source of foreign workers to the industry who are able to successfully integrate into the community and workplace.</p> <p>Engaging employers and communities in the settlement of immigrant workers and their families.</p> <p>Recognition of the skills and credentials of foreign trained workers.</p> <p>Need for bridging programs to facilitate timely entry to work of foreign trained workers.</p>	<p>(i) Where needed, initiate settlement planning processes in the workplace and the community prior to the arrival of immigrant and foreign workers building on existing models e.g. Petroleum Human Resources Council ; "Welcoming Communities".</p> <p>(ii) Promote the use of SIAST home country pre-screening of credentials of potential immigrants and temporary foreign workers in their areas of expertise.</p> <p>(iii) Develop and promote the use of immigrant bridging and retention programs and "skills gap training".</p> <p>(iv) Establish an Industry/Canada/ Saskatchewan partnership to promote the inclusion of more high skills, trades and professional occupational categories in immigration policies.</p>	<p>Industry (Petroleum HR Council) Saskatchewan Saskatchewan Institute of Applied Science and Technology (SIAST) Regional Colleges Saskatchewan Immigrant Nomination Program (SINP) Community Stakeholders Regulatory and professional Organizations</p>

- Immigration is fueling two thirds of Canada's current population growth and will likely become the only source of population growth gains by 2030.
- SIAST has the mandate to pre-screen and validate credentials in the home country of potential immigrants prior to their entry into Canada and Saskatchewan.
- Industry must identify and match the workforce competence standards required in close collaboration with SINP.
- The SINP undertakes joint international recruitment missions with interested employers to hire skilled foreign workers.
- "Welcoming Communities" – to facilitate settlement, integration and retention of workers and their families in their community and workplace, a community/employer receiving newcomers must develop a Settlement Plan – the Immigration Branch of Sask. AEE can help facilitate this process.

## 10.2 Recruitment

### 10.2.4 Recruitment – Relocation and Repatriation

Other provinces are a potential source of labour supply to the Saskatchewan upstream oil and gas workforce.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
Technicians Operators Helpers Labourers Semi-skilled Workers Trades (Apprentices) Specialty Business Services	To build upon the recent provincial government initiative to attract the return of workers who have left the province.	(i) The Saskatchewan government and industry may initiate a joint inter-provincial recruitment campaign to promote the workforce needs and opportunities of the upstream oil and gas industry to other sectors. Expansion of the "Saskatchewan!" initiative. (ii) Promote the use of the "Sask Jobs" website and create a link to the Petroleum HR Council Web portals.	Saskatchewan Industry (Petroleum HR Council)

- The Saskatchewan! Campaign promoting the return of Saskatchewan born employees appears to be having a positive effect.
- Promoting the recruitment or relocation of potential employees from other provinces may also prove effective.



## 10.2 Recruitment

### 10.2.5 Recruitment – Local Area Recruitment

Recruitment of workers in local areas of industry activity and areas where there is a supply of workers may alleviate workforce shortages in some categories.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
Technicians Operators Helpers Labourers Semi-skilled Workers Trades (Apprentices) Specialty Business Services	To identify and inform individuals resident in areas of major industry activity, of employment opportunities available in the industry	(i) Initiate a public relations/public information campaign on employment opportunities available with particular focus on areas where there is a supply of potential workers including aboriginal people and women. (ii) Identify part-time, seasonal and contract opportunities available in the industry and maintain a registry of applicants.	Industry  Local employment centres  Community based economic and service organizations

- Industry and the Can-Sask employment centers network can collaborate on an informational campaign identifying employment opportunities for potential employees recruited from local areas of industry activity.

### 10.3 Retention

#### 10.3 Retention

Competitive wages, positive workplace environment, and benefit packages are identified as the most effective methods of retaining employees.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
All occupational categories	To inform industry sectors of the importance and need to offer established effective retention policies	Provide information to industry on available cultural sensitivity training and informational programs regarding the women, aboriginal and immigrant workforce.	Saskatchewan First Nations and Métis Relations (FNMR) Métis Nation of Saskatchewan (MNS) Federation of Saskatchewan Indian Nations (FSIN)

- A positive workplace environment is essential to the retention of aboriginal and other visible minority employees – Saskatchewan First Nations and Métis Relations offers excellent cultural sensitivity training programs through their Representative Workforce Initiative (RWI) program.
- Benefits directed address “family related” matters such as day care, child care, and transportation may be of particular interest to employees.

## 10.4 Workforce Training

### 10.4.1 Saskatchewan Regional Colleges

Regional Colleges have developed quick response capacity to industry training needs – they are a major training vehicle for many of the skill sets and occupational needs of the industry.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
Operators Semi-skilled Workers Health and Safety Certification Trades Helpers Labourers Some Certification Occupations	Increase the Regional Colleges programming and delivery capacity in response to industry needs.	(i) Continue the establishment of formal industry/Regional College Partnership Committees in each relevant district to work on the preparation of multi-year industry training plans to address timing, location, and frequency recommendations identified by industry participants.  (ii) Assist and resource Regional Colleges to increase their access to community and industry training venues and equipment for on-the-job training.  (iii) Support joint industry/public supplementary funding of critical training initiatives for which ordinary resources are unavailable or inadequate.	Saskatchewan Advanced Education and Employment  Industry  Petroleum HR Council  Regional Colleges with emphasis on Southeast Regional College, Cypress Hills Regional College, Prairie West Regional College, Northwest Regional College, and Lakeland College.

- Regional Colleges have developed a quick response capacity to meet industry training needs – timing, location, and frequency of course offerings are issues to be addressed.
- Regional Colleges can adapt training to meet specific needs of an employer and are dedicated to training program alignment with industry needs and to the development of new programming.
- Southeast Regional College has developed a comprehensive oil and gas specific training plan.
- Many Regional Colleges require incremental space and equipment to meet emerging training needs of the oil and gas sector. This capacity should be developed close to areas of major industry activity.
- Regional Colleges have established relationships to provide training to the aboriginal community.

## 10.4 Workforce Training

### 10.4.2 Saskatchewan Institute of Applied Science and Technology

The Saskatchewan Institute of Applied Science and Technology is part of the educational infrastructure for accredited skills and trades training.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
All industry occupational categories requiring certification and/or apprenticeship accreditation	<p>Continue SIAST facilities expansion and increase capacity to reduce application backlogs.</p> <p>Increase SIAST capacity to deliver off-campus courses.</p>	Continue to implement the major objectives outlined in the 2006-2011 business plan with particular emphasis on facilities expansion, aboriginal and industry sector partnership development, customized training, reduction of application backlogs, and additional mobile off-campus training units.	<p>SIAST</p> <p>Saskatchewan Advanced Education and Employment</p>

- SIAST is Saskatchewan's primary public institution for post-secondary trades education and skills training.
- SIAST is expanding facilities and increasing training spaces.
- A "customer friendly" approach must be an essential component of the SIAST relationship with the oil and gas industry.

## 10.4 Workforce Training

### 10.4.3 Saskatchewan Indian Institute of Technologies and the Gabriel Dumont Institute

The SIIT and the GDI are part of the Saskatchewan educational infrastructure, with the mandate for delivering accredited skills and career training focusing on the First Nations and Métis population.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
All industry occupational categories requiring certification and/or apprenticeship accreditation	To provide SIIT and GDI with increased resources to deliver industry-specific courses to their mandated constituencies.	Develop a partnership between SIIT and GDI to increase industry specific training capacity for aboriginals.	SIIT GDI Industry Petroleum HR Council Saskatchewan Apprenticeship and Trade Certification Commission

- SIIT and GDI have the mandate and the community contacts network to provide training programs to the aboriginal constituency.
- Industry needs to work closely with these institutions to attract and train aboriginal employees.

## 10.4 Workforce Training

### 10.4.4 In-School Counseling

Career planning should be supported throughout the K – 12 curriculum and formally commence in the middle school years and continue through to matriculation.

Industry Occupations	Issue/Challenges	Action Options for the upstream oil and gas industry	Potential Responsibility/Participants
All industry occupational categories	To provide in-school students with the information and career path counseling to enable them to make informed choices and select the mandatory academic qualifications required.	The development of focused information materials to be made available to Saskatchewan school systems and counselors on career opportunities in the upstream oil and gas industry.	Industry (Petroleum HR Council) Saskatchewan Learning

- There are several models and informational materials available from sources such as Petroleum HR Council and the Regional Colleges for resource based career opportunities counseling.

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## APPENDICES

### APPENDIX A: SASKATCHEWAN REGIONAL COLLEGES PROGRAM OFFERINGS

Truck Driver Training/Air Brake  
Truck Driver Training 1A  
Industrial Mechanics  
Power Engineering Class IV  
Heavy Equipment Operator  
Oilfield/Chainsaw Safety Training  
Power Engineering  
Heavy Oil Operations technician  
Vacuum Truck Operator  
Heavy Equipment Immersion Program  
Heavy Equipment Truck & Transport  
Heavy Equipment Mechanics  
Oil Industry Training  
Power Engineering  
Seismic Slasher Worker  
Oil Field Safety  
Professional Oilfield Driver Program  
Confined Space Entry  
Construction Safety Training  
CPR  
Detection and Control of Flammable Substances  
Emergency First Aid  
Ground Disturbance  
H2S Alive  
Oil and Gas Production Accounting  
Pesticide Training  
Petroleum Safety Training  
Red Cross Recertification  
Safety Management and Regulatory Awareness for Wellsite Supervision  
Safety Program Development  
Standard First Aid  
Transportation of Dangerous Goods  
Well Service Blowout Prevention  
WHMIS  
TDS On-Line  
Under 5 Tonne Boom Truck  
Special Boiler Operator  
OH & S Ready to Work  
Forklift Safety  
Fall Protection for Rig Workers  
Rig Rescue  
Mud Tank Confined Space  
Skid Steer Safety  
SECOR Refresher  
Spill Response  
Due Diligence Workshop  
Off Highway Defensive Driving  
Driver Evaluations  
First Responder Fire Training

Environmental Regulations Workshop  
Well Service Assessor  
Environmental Spill Containment  
General Oilfield Driver Improvement  
Rig Technician Technical Training

## APPENDIX B: Employment Diversity

Governments, Institutions, and Corporations in Canada and the United States have recognized the value of having a well-integrated diversity and equity program within their organization.

Trevor Wilson is one of Canada's leading consultants specializing in diversity management and employment equity. His firm's clients include some of North America's largest and most progressive employers, including IBM, Nortel, Ernst and Young, and Bell Canada.

Many Saskatchewan based businesses and institutions have adopted the "Wilson" approach to developing and implementing a workforce diversity program including the University of Saskatchewan, Sask. Power Corporation, Sask. Credit Unions, and Federated Co-op as examples.

The main objectives and elements of a workforce diversity strategy are detailed in the publication "Diversity at Work – The Business Case for Equity", Trevor Wilson, John Wiley & Sons Canada Limited, 1997. The information presented in this Appendix is extracted from this publication.

**Workforce Diversity Objective:** To create a workforce development strategy which recognized the changing workforce demographic reality and which recognizes the importance of a harmonious workplace environment.

**The Changing Workforce Demographic Reality:** The elements which must be addressed in a diversity program include:

- Increased participation of women in the workforce;
- More dual-earner families;
- More single-parent families;
- More women with responsibility for infant children;
- An older workforce;
- More workers caring for elderly parents or relatives;
- People of colour and ethnic minorities;
- Persons with disabilities;
- Gay and Lesbian workers;
- Aboriginal peoples and;
- Changing worker values.

**The essential components of a diversity strategy are:**

- Diversity strategies must be linked to business objectives and not to the correction of past injustices;
- Diversity must be all inclusive and not accord preferential treatment for some groups;
- Diversity must be based on the merit principle and avoid tokenism and reverse discrimination and;
- A diversity program must not rely on numerical representation of the diversity of the workforce to measure the success of the program. Numbers can divert attention from the real equity issues.

**The common links within all highly successful equitable employment system are:**

- Management commitment;
- Employee awareness and participation;
- An effective communications strategy;
- Accommodation and flexibility for family and ethnic related circumstances;
- Diverse work teams;
- Equitable opportunity in hiring, promotion, and recognition of merit and skill policies and;
- Dignity and respect.

A number of "Best Practices" in developing and implementing a workforce diversity program are identified in **Appendix C** of this study.

## APPENDIX C: Best Practices Synopsis

This Appendix provides a synopsis of effective recruitment and retention practices identified by the key informant oil and gas industry employer interviews conducted during this study and information gathered from literature research on workforce diversity program implementation.

The following information highlights a number of elements which should be addressed in the Saskatchewan upstream oil and gas workforce development plan:

- Recruitment strategies must be designed to attract women, aboriginals, immigrants, and persons with disabilities to the industry workforce;
- Competitive wages and benefits packages are required with respect to other sectors having similar workforce occupational needs;
- Gender wage parity must be an industry objective;
- Flexible accommodation policies may include dependent care connection services, flexible hours, emergency child care services, time off in lieu of overtime, family and personal days off, and a corporate fitness program;
- Internal policies and programs which provide for employee participation in corporate planning "work teams", bridging programs which introduce employees to non-traditional job opportunities, in-house training and mentoring, special share offerings and internal trading opportunities, and leave of absence policies which allow for participation in sabbaticals and other related personal improvement initiatives;
- Equitable opportunity through open in-house job advertising, employee skills inventory to expedite in-house transferable skills, partnerships with non-traditional organizations, and alliances with professional associations and institutions to establish transferability of foreign credentials and;
- Respect and dignity policies including a harassment mediation service, cross cultural sensitivity training, gender awareness educational programs, and a code of ethics that is integrated and reinforced throughout the total workforce.

**APPENDIX D: Survey Questionnaire**

Fast Consulting, a Saskatchewan based professional management consulting firm is administering one-on-one client surveys on behalf of Petroleum Human Resources Council of Canada. Funding for this project is provided by Saskatchewan Advanced Education and Employment and Human Resources and Skills Development Canada.

Your opinions are an important aspect to this project and will help the Petroleum Human Resources Council of Canada and their funding partners better understand employment issues in the Saskatchewan upstream oil and gas industry. Specifically the survey will explore topics surrounding current employment demands, hiring barriers, retention barriers, hiring and retention best practices as well as future industry expectations.

Please keep the following in mind when responding to the survey:

- ◇ One-on-one interviews are a way for market research organizations to collect opinions from individuals in a more detailed manner than a traditional telephone survey.
- ◇ The survey should take approximately 20 to 30 minutes to complete.
- ◇ All the answers you give will be confidential and will not be used in a way that can identify any corporate affiliations.
- ◇ Surveys of this type are exploratory – there are no right or wrong answers. Please speak for yourself. We are not looking for consensus or agreement – it's your opinions that are important.
- ◇ We will be asking questions that require your thoughts, opinions and ideas. Feel free to take time to express yourself fully on each question as the more information you give the more help you are to the outcome of the project.
- ◇ We encourage you to complete the survey in one sitting, however if you feel you do not have time to complete the survey in one sitting we will make appropriate arrangements to get your opinions.

If you have any questions regarding this survey, please send an email to Jim Ludwig, Project Manager [jim.ludwig@sasked.gov.sk.ca](mailto:jim.ludwig@sasked.gov.sk.ca) or telephone 306-953-2744.

Terminate1b. How many employees presently work full or part time within Saskatchewan? \_\_\_\_\_

→ if terminate1b = zero or unsure politely terminate interview



1. In what areas of Saskatchewan do the majority of your job activities occur? (READ. SELECT ONLY ONE.)

1. Central East
2. Central West
3. South
4. North East
5. North West

#### Current Company Snapshot

2. First of all, in order to understand more about the companies we are talking to, from the following list can you select the key job families that best describe the types of employees your company directly hires in Saskatchewan? (READ. SELECT AS MANY AS APPLY.)

- 1.) Engineers (includes design, construction, operation, maintenance, quality control of critical systems to the exploration, production, processing and transportation)
- 2.) Geosciences Professionals (applying knowledge of science to locate and analyze)
- 3.) Helpers, Labourers & Semi skilled-workers (manual labour duties and/or operating specialized equipment)
- 4.) Operators (of control systems and equipment related to plants and facilities)
- 5.) Specialty Business Services (transportation, environment, health and safety, mineral rights acquisition, regulatory affairs)
- 6.) Technicians (Certified) (installation, operation, servicing, monitoring, troubleshooting and fixing equipment)
- 7.) Technologists (Certified) (designing devices and equipment, deciding which equipment to use on a project)
- 8.) Trades (carrying out the industry's day to day functions and/or keeping equipment and facilities in reliable working order.)
- 9.) Drilling Workers (for example drilling rig workers, well servicing workers, leasehand, floorhand, motorhands, derrickhands, and drillers and rig managers)?
- 10.) Other → \_\_\_\_\_

3. Please give us an estimate of how many full-time, part-time, temporary (this includes casual) and seasonal employees work for your company and how many vacant positions presently need to be filled in Saskatchewan?

Category	Number of Employees This Calendar Year	Number of Vacant Positions
Full time		
Part time		
Temporary (including casual)		
Seasonal		

3a. Generally, can you tell us some of the reasons employees give for leaving your company? (DO NOT READ. SELECT AS MANY AS APPLY.)

- 1.) Job is too physically demanding
- 2.) Experiencing a cultural bias
- 3.) Experiencing a gender bias
- 4.) No advancement opportunity
- 5.) Language barriers
- 6.) Not trained/unskilled labour
- 7.) Age barrier/retirement
- 8.) Location/remote location
- 9.) Pay/compensation not high enough
- 10.) Competition from other companies/sectors
- 11.) Moving
- 12.) Going back to school/training
- 13.) Other → \_\_\_\_\_

4. At present is your company experiencing any employee shortages?

- 1.) Yes
- 2.) No/Unsure → go to question 8

5a. From the list below can you tell us in what key job family your company experiences the most critical (one comment asked to define critical and that definition should be supplied by the committee) shortage? (READ. SELECT ONLY ONE RESPONSE.)

- 1.) Engineers
- 2.) Geosciences Professionals
- 3.) Helpers, Labourers & Semi skilled-workers
- 4.) Operators
- 5.) Specialty Business Services
- 6.) Technicians (Certified)
- 7.) Technologists (Certified)
- 8.) Trades
- 9.) Drilling Specialists
- 10.) Other → \_\_\_\_\_

5b. And using the same list can you tell us if there are any other key job families where your company experiences shortages? (SELECT AS MANY AS APPLY.)

- 1.) Engineers
- 2.) Geosciences Professionals
- 3.) Helpers, Labourers & Semi skilled-workers
- 4.) Operators
- 5.) Specialty Business Services
- 6.) Technicians (Certified)
- 7.) Technologists (Certified)
- 8.) Trades
- 9.) Drilling Specialists
- 10.) Other → \_\_\_\_\_

Future Hiring Plans

6. In the next 5 years do you expect your operations in Saskatchewan will require....

- 1.) More employees
- 2.) Less employees
- 3.) About the same number of employees
- 4.) Unsure/dk

6a. Why do you say that?

→ if Question 6 = 2, 3 or 4 go to Question 8

6a. And from the list below can you tell us in what key job family your company expects it will experience critical shortages? (READ. SELECT AS MANY AS APPLY.)

- 1) Engineers
- 2) Geosciences Professionals
- 3) Helpers, Labourers & Semi skilled-workers
- 4) Operators
- 5) Specialty Business Services
- 6) Technicians (Certified)
- 7) Technologists (Certified)
- 8) Trades
- 9) Drilling Specialists
- 10) Other → \_\_\_\_\_

Hiring

7. Question 7 was moved to become Question 3(a).

8. Can you tell me if any of the following barriers exist in your company that prevent you from hiring and/or retaining employees?

Barrier	Yes Prevent from Hiring	Yes Prevent from Retaining
Job is physically demanding		
A cultural bias (community/social group not supportive)		
A gender bias (activity not suited for one gender)		
No advancement opportunity		
Language barriers		
Not trained/Unskilled labour pool		
Age barrier/attrition due to age (activity not suited for aging worker)		
Location/remote location		
Pay/compensation not high enough		
Competition from other companies/sectors		

9. When hiring does your company actively recruit potential employees from any of the following work pools. (READ. SELECT AS MANY AS APPLY.)
- 1.) Women
  - 2.) Aboriginal
  - 3.) New immigrants/visible minority
  - 4.) Disabled
10. Has your organization/company used any of the following to successfully increase employment and promote career development in the oil and gas industry?
- 1.) Participated in high school/vocational job fairs
  - 2.) Participated in university/tech job fairs
  - 3.) Looked out of province for employees
  - 4.) Looked out of country for employees
  - 5.) Recruited in First Nations communities
  - 6.) Used local agencies
  - 7.) Other \_\_\_\_\_
11. When hiring does your company actively compete against other companies/organization in the oil and gas sector to hire employees?
- 1.) Yes
  - 2.) No/Unsure
- 11.a Does your company actively compete against companies/organization in other sectors to hire employees?
- 1.) Yes → which sectors \_\_\_\_\_
  - 2.) No/Unsure

#### Retention/Training

12. What types of benefits or attractions has or does your company offer(ed)?  
(DO NOT READ. SELECT AS MANY AS APPLY.)
- 1.) Higher wages
  - 2.) Benefit package
  - 3.) Training
  - 4.) Moving allowance
  - 5.) Bonus package
  - 6.) Other → \_\_\_\_\_
13. Does your company offer training to new employees?
- 1.) Yes
  - 2.) No/Unsure → got to Que15

14. What type of training does your company offer to new or existing employees? (DO NOT READ. SELECT AS MANY AS APPLY.)

1. On the job training
2. Through industry associations
3. Through post-secondary programs
4. Through apprenticeship programs
5. Re-training for new positions/upgrading skills (promoting within organization)
6. Other→ \_\_\_\_\_

→ go to Que16

15. Can you tell me why your company does not offer training?

---

16. Do you see existing barriers that prevent or reduce the number of training opportunities for potential employees? (DO NOT READ. SELECT AS MANY AS APPLY.)

1. No local programs (geographic/proximity to employee)
2. No programs close to hiring organization/company
3. No relevant programs
4. Wait lists
5. Issues with indenturing apprentices
6. Other→ \_\_\_\_\_

16a. In your opinion, have the Saskatchewan training institutes such as SIAST, regional colleges, universities and apprenticeship programs met your needs for qualified employees?

- 1.) Yes → go to Que17
- 2.) No/Unsure

16b. What improvements would you like to see the training institutes implement to better meet your needs for qualified employees?

---

### Best Practices

Best practices are initiatives that have been successfully used by companies to achieve a particular goal or objective. We are looking for best practices that have worked to increase employment and career development within the oil and gas industry.

17. Can you give us examples of how your company actively recruits new employees to your company?
- 

18. Please explain how your company has overcome barriers when recruiting new employees?
- 

19. Can you give us examples of how your company retains employees once they have been hired?
- 

20. Please explain how your company has overcome barriers when retaining employees?
- 

21. Can you describe the career development strategies and policies your company has developed to advance employees?
- 

### Future Outlook

22. Can you tell us what types of emerging occupations you foresee your company will need trained employees for in the next 1 to 5 years?
- 

23. And how about over the next 5 to 10 years?
- 

24. And what type of training do you predict future employees will be required to have for these future jobs?
- 

25. If you had to predict how would you say the industry will look in the next 10 years?
- 

26. And finally do you have any other comments you would like to share?
- 

This is the end of our evaluation survey. Thank you very much for taking the time to give us your opinions.

**Appendix E: Key Informant Interview Verbatim Responses**

*Can you give us examples of how your company actively recruits new employees to your company?*

- 'I've worked in south east Saskatchewan all my life and the rig managers have too. Reputation makes people want to work for us. We're a small company and know everyone and their wives.'
- 'Word of mouth. Our employees phone friends and nothing works faster. We get to know our employees personally.'
- 'Stability of the corporation. We pay a lot of attention to safety.'
- 'We advertise in the company and use provincial ads and the internet.'
- 'We use newspaper ads, word of mouth and we use recruitment agents in the East Coast.'
- 'We offer a good benefit package and a good profit sharing.'
- 'We offer good safety programs and good reputation.'
- 'We advertise locally, provincially and country wide.'
- 'We take a lot of high school kids and train them in skills and safety.'
- 'We make it attractive, offer bonuses, wages and new equipment.'
- 'We have a network within the industry and normally it works well except when demand is high.'
- 'We job hunt for senior positions. When we hire other people it is usually by word of mouth. We run companies like a family where everyone is important. We also pay higher and provide profit sharing.'
- 'We use in-house referrals and in-house training as a "leg-up" over competition. Formal in-house training is quite attractive to new people.'
- 'We offer "on-the-job" training and show them what the job will be. We let them watch other workers and what the position is. We do the same once they are hired by offering to show them what the next position is. Some stay at the rig or in current position once training is done. Others simply don't work out or don't want to stay once they see how hard they have to work for their money. It sometimes works, it sometimes doesn't.'

*Please explain how your company has overcome barriers when recruiting new employees?*

- 'We have tried recruiting at job fairs, but it seems to cause more issues than help. There is no return on investment.'
- 'We don't experience real barriers except for added skill sets within the job.'
- 'There aren't any barriers, we look for attitude.'
- 'We've overcome barriers by becoming better at identifying people who are right for the job.'
- 'We show potential employees what we have and what they'll be working with.'
- 'We use CAODC since most drilling contractors belong to this group.'
- 'When there is a shortage of people we provide a positive work environment and make them want to work here.'
- 'We work at it and just keep trying different things.'

*Can you give us examples of how your company retains employees once they have been hired?*

- 'We offer perks such as higher wages and benefits.'
- 'We offer competitive salaries, bonuses and stock options.'
- 'We offer excellent benefits and merit increases for wages.'
- 'We offer wages, benefits and bonuses.'
- 'We offer incentive programs and good wages.'
- 'We offer good equipment and safe working.'
- 'We retain through competitive wages and profit sharing.'
- 'We offer competitive wages.'
- 'We show them respect and work together.'
- 'We offer wages and benefits.'



- 'We offer benefit plan and higher wages as well as worldwide advancement.'
- 'We offer profit sharing and stock options and we stay competitive.'
- 'We treat them well. We like to do little things like gift cards every now and then so they know we're thinking about them.'
- 'We make sure they are paid well.'
- 'We offer bonus programs and longer term employees get perks.'
- 'We offer job bonuses and treat them properly.'
- 'We offer high wages and bonuses.'
- 'We treat them fairly and get to know them.'
- 'We offer profit sharing, pension plans, benefits and we have a safety committee. We're not a huge company, we see people everyday and we know their names and make them feel a part of the business.'
- 'We offer pension plans, profit-sharing. In fact they get first cheque in a couple weeks which is new found money for hourly employees.'
- 'We promote and advertise any position "in-house" first and internationally second. We also offer pensions, H and D, and a savings plan.'

*Please explain how your company has overcome barriers when retaining employees?*

- 'We offer financial incentives and new clothing and cleaning allowance.'
- 'We help with transportation to get employees to and from work, we offer travel benefits and provide safety clothes and equipment.'
- 'We stay competitive, offer flexible hours and in some cases strong financial incentives.'
- 'We offer advancement within the company.'
- 'We have a good network that normally keeps a group of core people working.'
- 'About a year ago some of our guys could have left for advancement, but they didn't. They stuck around and because of that they will be advanced, and we'll hire to replace the lower level jobs they are leaving.'
- 'We offer pay increases.'
- 'We try to keep them working, try to be fair and generally have good relations with all employees.'

*Can you describe the career development strategies and policies your company has developed to advance employees?*

- 'We pay for training in trades and help get them their 1A drivers' license.'
- 'We train continuously on the job.'
- 'Anyone who shows initiative is offered opportunities here.'
- 'There is no real advancement available.'
- 'We train for employment here plus there is room for advancement to other branches in Alberta.'
- 'We offer a short "in-house" service worker program and we have mentors on site.'
- 'We offer continual assessment and training programs.'
- 'We give work experience with on the job training, mainly for the 1A drivers' license.'
- 'We train our employees to upgrade to 1A drivers' license.'
- 'We offer well targeted training programs and recognition of work.'
- 'There is always movement with people retiring or leaving for people that fit in.'
- 'We offer different courses to advance people, increase product knowledge and give more awareness.'
- 'Every 18 months we can expand the companies business and involve employees in the company to get them more involved in taking ownership.'
- 'We're always dealing with new technologies so there are always financial gains and training to be undertaken.'
- 'We train "in-house" for specific skills needed by our company.'
- 'We have "in-house" training modules that the employees take here, as someone retires others move up. We're not like the union as it is not based strictly on seniority but rather qualifications.'

- 'We post all positions, do all the training, try to update training, especially safety. Safety is a number 1 priority.'

*Can you tell us what types of emerging occupations you foresee your company will need trained employees for in the next 1 to 5 years?*

- 'The safety issue is a numbers game, which means we may have to add people down the road.'
- 'We have to be more efficient and better trained. New people must be trained in a well-rounded way.'
- 'Down-hole technology is becoming huge, so we'll need more technical staff in this area.'
- 'We'll need to hire for safety. We'll need a person full-time just to run the safety programs.'
- 'More geared to expertise and more technologically sophisticated.'
- 'Specialized equipment operators.'
- 'Safety is an issue that is evolving and we're more regulated than in the past so safety training is primary.'
- 'Continuing evolution will require more technically capable people.'
- 'More in the safety end and people who have skills and who know how to deal with people.'
- 'More technical staff to deal with the new technology.'
- 'New technologies will emerge.'
- 'Occupation Health and Safety people.'
- 'Technology is the most quickly evolving aspect of our work so some thing along that line I suppose.'
- 'The safety aspect of the industry.'
- 'There may be some new technologies but they don't seem to require any intensive training just ordinary incorporation.'
- 'There will always be change as it is different now than thirty years ago but given that it is still very similar now to what it was thirty years ago I don't expect much change.'
- 'Changes have begun and will happen with more frequently over the next five to ten years.'
- 'There will be different requirements depending on the ticketed skills.'
- 'I would imagine higher level technical people.'
- 'Overall the industry will become more sophisticated'.
- 'Probably more of the same although it is dependent upon the market.'

*And what type of training do you predict future employees will be required to have for these future jobs?*

- 'Mostly safety related.'
- 'Canadian Registered Safety Professional training ladder.'
- 'We will train existing employees for any further positions and these jobs in Saskatchewan will need a well-rounded person. Firstly to do the regular work but also to be a salesperson and Canadian Registered Safety Professional all wrapped up in one.'
- 'Competency based apprenticeship programs.'
- 'Engineering and technically trained people.'
- 'SIAST type training.'
- 'Pickers and boom operators will have to be trained, also a full-time Occupational Health and Safety person.'
- 'Safety training.'
- 'More safety training and trades training.'
- 'With farm boys no longer around we'll need more "Nintendo" kids these are the guys trained to handle the "joystick", etc.'
- 'People will need more technical skills and generally be more computer savvy.'
- 'Computer skills.'

*If you had to predict how would you say the industry will look in the next 10 years?*

- 'We're slowing over the next 12 to 18 months it will be slower.'
- 'I think it will slow down but nothing drastic for the next 5 years, after that I couldn't guess.'
- 'I predict it will level off with more predictable market patterns.'
- 'Unpredictable.'
- 'We'll be here and bigger and offer more services.'
- 'It's dependant on politics for example royalties and regulations change because of politics. So the political arena will decide the market.'
- 'We'll be fine and will remain at a very active level, especially in south east Saskatchewan.'
- 'The industry is moving forward by leaps and bounds because of new drilling technology, which will enhance industry (i.e. CO2 injection will extend life of energy sector and help get rid of the greenhouse problem too).'
- 'There will be fantastic opportunities for young people coming into the industry as baby boomers leave.'

## EXHIBIT 1

## LEGEND

## FIRST NATIONS LOCATIONS AND TRIBAL COUNCIL AFFILIATIONS

Number	FIRST NATION	TRIBAL COUNCIL AFFILIATION
4	Big River	Agency Chiefs
49	Pelican Lake	Agency Chiefs
68	Witchehan Lake	Agency Chiefs
1	Ahtahkakoop	Battlefords Tribal Council
30	Little Pine	Battlefords Tribal Council
31	Lucky Man	Battlefords Tribal Council
35	Moosomin	Battlefords Tribal Council
36	Mosquito/Grizzly Bear's Head	Battlefords Tribal Council
53	Poundmaker	Battlefords Tribal Council
55	Red Pheasant	Battlefords Tribal Council
62	Sweetgrass	Battlefords Tribal Council
9	Carry the Kettle	File Hills Qu'Appelle
29	Little Black Bear	File Hills Qu'Appelle
37	Muscowpetung	File Hills Qu'Appelle
41	Nekaneet	File Hills Qu'Appelle
44	Okanese	File Hills Qu'Appelle
47	Pasqua	File Hills Qu'Appelle
48	Peepeekisis	File Hills Qu'Appelle
52	Piapot	File Hills Qu'Appelle
59	Standing Buffalo Dakota *	File Hills Qu'Appelle
60	Star Blanket	File Hills Qu'Appelle
69	Wood Mountain *	File Hills Qu'Appelle
5	Birch Narrows	Meadow Lake
7	Buffalo River Dene	Meadow Lake
8	Canoe Lake Cree	Meadow Lake
10	Clear Water River Dene	Meadow Lake
15	English River	Meadow Lake
17	Flying Dust	Meadow Lake
21	Island Lake	Meadow Lake
32	Makwa Sahgaiehan	Meadow Lake
65	Waterhen Lake	Meadow Lake
27	Kinistin Saulteaux	Saskatoon
33	Mistawasis	Saskatoon
38	Muskeg Lake	Saskatoon
39	Muskoday	Saskatoon
45	One Arrow	Saskatoon
67	Whitecap Dakota *	Saskatoon
70	Yellow Quill	Saskatoon

## FIRST NATIONS LOCATIONS AND TRIBAL COUNCIL AFFILIATIONS

Number	FIRST NATION	TRIBAL COUNCIL AFFILIATION
6	Black Lake	Prince Albert
13	Cumberland House	Prince Albert
18	Fond Du Lac Denesuline	Prince Albert
20	Hatchet Lake	Prince Albert
22	James Smith	Prince Albert
28	Lac La Ronge	Prince Albert
34	Montreal Lake	Prince Albert
50	Peter Ballantyne	Prince Albert
54	Red Earth	Prince Albert
58	Shoal Lake	Prince Albert
61	Sturgeon Lake	Prince Albert
64	Wahpeton Dakota *	Prince Albert
14	Day Star	Touchwood Agency
16	Fishing Lake	Touchwood Agency
19	Gordon	Touchwood Agency
24	Kawacatoose	Touchwood Agency
40	Muskowekwan	Touchwood Agency
11	Cote	Yorkton
12	Cowessess	Yorkton
23	Kahkewistahaw	Yorkton
25	Keeseekoose	Yorkton
26	Key	Yorkton
42	Ocean Man	Yorkton
56	Sakimay	Yorkton
2	Beardy's and Okemasis	Unaffiliated
3	Big Island Lake	Unaffiliated
43	Ochapowace	Unaffiliated
46	Onion Lake	Unaffiliated
51	Pheasant Rump Nakota	Unaffiliated
57	Saulteaux	Unaffiliated
63	Thunderchild	Unaffiliated
66	White Bear	Unaffiliated

\* Did not sign Treaty

